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ABSTRACT

This document contains 13 papers by Soviet participants in the U.S.-U.S.S.R. Seminar on Access to Library Resources through Technology and Preservation: (1) "Automation of Information-Library Work at Scientific and Technical Libraries of the U.S.S.R." (A. S. Sorokin and V. M. Rostovtsev); (2) "Automated Information Systems for Culture and Art" (A. P. Volik and A. P. Repin); (3) "The Automatized Preparation of State Bibliography" (Iurii Vladimirovich Torsuyev); (4) "Automated Bibliographical Processing of Documents in the Lenin State Library" (Aleksandr Nikolaevich Vostrikov); (5) "The Creation of Automated Information Library System of the U.S.S.R. Ministry of Culture" (A. P. Volik); (6) "The State Policy To Ensure the Preservation of the Library Stock in the Country" (Nikolai Semenovich Kartashov); (7) "Preservation of the Library Stocks in the Lenin State Library" (Z. P. Dvoriashina); (8) "Preservation of Book Collections in Regional Libraries" (Z. P. Dvoriashina); (9) "Microforms as a Means To Preserve Soviet Library Funds" (Iuliia Petrovna Niuksha; (10) "Document Stabilization in Libraries" (Iuliia Petrovna Niuksha); (11) "The Automatized Preparation of State Bibliography" (Iurii Torsuev); (12) "Software and Information Support for the Automatized System of the State Bibliography of the U.S.S.R." (A. A. Ratnikov); (13) and "State Bibliography Linguistic Support in the U.S.S.R." (A. A. Dzigo). (MES)

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Papers by U.S.S.R. Participants

ACIL

US-USSR Seminar on Access to Library Resources through Technology and Preservation

5-8 July 1988, Washington, D.C.

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US-USSR Seminar on Access to Library Resources through Technology and Preservation, 5-8 July 1988, is an activity of the US-USSR Commission on Library Cooperation of the American Council of Learned Societies and the Library Council of the USSR, administered in the United States by the International Research and Exchanges Board (IREX). The seminar is sponsored by the American Library Association (ALA), and held in cooperation with The Library of Congress.

American Library Association
Chicago, Illinois

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State Bibliography Linguistic Support
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BIOGRAPHICAL INFORMATION ON THE SOVIET PARTICIPANTS

1) Prof. Kartashov, Nikolai Semenovich, head of the delegation, President of the USSR Library Council, Director of the Lenin State Library of the USSR, Chairman of the Doctorate Learned Council in Librarianship, Doctorate Pedological Sciences, born 1928, Chief Editor of the serial "Soviet Librarianship," standing committee member of IFLA Section on National Libraries, leading theoretician in the field of information and library studies, his main interests: library networking and regional resource sharing. Previously he worked as a professor of librarianship in Institutes of Culture and for 20 years as the Director of the State Library on Science and Technology in Novosibirsk. He is the author of more than 100 publications, among them the monograph "Forming of Library-Territorial Complexes."

2) Dr. Bogatov, Boris Pavlovich, Director, Information Computer Centre, Russian SFSR Ministry of Culture, Candidate of Technical Sciences, born 1932. He is chief constructor of automated system "Roskultura," and specialist in management automation and information in culture.

3) Dr. Dzhigo, Aleksandr Aleksandrovich, Head, Research Department of State Bibliography of Research and Production Association "All-Union Book Chamber," Candidate of Philological Sciences, born 1949. He is specialist in linguistic problems.

4) Kanzleris, Algirdis Iustovich, Deputy Director for Research of the State Library of Lithuanian SSR in Vilnius, born 1933, former professor of Vilnius State University in informatics and reading culture, professional interests: informatics, library automation, integral reading research. He has more than 150 works among them "Man-Information User," "Study TV," "Rational Reading."

5) Kasianenko, Andrei Ivanovich, Head, Department of International Relations of All-Union State Library of Foreign Literature, born 1950, standing committee member of IFLA Section on Social Science Libraries, before he worked in the library as section head of book promotion, 1980 till 1984 in the United Nations Library in New York City. He is the author of several publications on social science libraries and international library relations.

6) Navrotskaia, Valentina Dmitrievna, Head of Library Directorate of the Ministry of Culture of Urkainian SSR, born 1939, specialist in Librarianship. She has several publications on organization of the catalog and file system for children, organization of youth readers services, organization of library service to republic population.

Biographical information

7) Dr. Niuksha, Iuliia Petrovna, Head, Document Conservation Department of the Saltykov-Shchedrin State Public Library in Leningrad, working experience in conservation of library collections more than 40 years. She has more than 170 research publications, 11 inventions, diplomas and medals at the All-Union Exhibition of Economic Achievements. Her main research interests: bio damage and document protection, she works as well on mechanization of restoration of works and studies in theoretical document conservation problems, she is the author of "Document Restoration Method by Leafcasting System."

8) Ratnikov, Aleksandr Aleksandrovich, Head, Research Department on Development and Introduction of Databank (State Bibliography) of Research and Production Association "All-Union Book Chamber," born 1947, specialist in development of applied software of automated compliation of the state bibliographical indexes, before that he worked in Moscow Polygraphic Institute on creation of computerized sets of mathematical formula. He has two publications in professional journals.

9) Rejal, Mikhel Mikhailovich, Deputy Director of Kreutzwald State Library of Estonian SSR in Tallinn, born 1947, the Research Leader of the theme "Automatization of Library Processes in State Library of ESSR." His competence within the library: technological equipment, development of automated library technology, construction of the new building.

10) Dr. Sorokin, Aleksandr Sergeevich, Director, the State Public Science and Technology Library, Candidate of Technical Sciences, before the library he worked at the International Centre of Research and Technical Information in Moscow and in the Secretariat of International Atomic Energy Agency in Vienna, specialist in automated information and library systems.

11) Dr. Torsuev, Iurii Vladimirovich, General Director of Research and Production Association "All-Union Book Chamber," Candidate of Philosophical Sciences, born 1929, specialist in publishing and national bibliography. He has more than 20 publications, among them works connected with Automated Processing of Bibliographical Information.

12) Vostrikov, Aleksandr Nikolaevich, Chief, Research Department of Library Automation of the Lenin State Library of the USSR, Candidate of Physical-Mathmematical Sciences, born 1950, Leader of Problem Council "Automation of Library and Information Processes," standing committee member of the IFLA Section on Information Technology, Leader of the Soviet Part of the 8th Working Group of Ministries of Culture of Socialist Countries "Library Technique and Technology," specialist in creation of automated library systems. Before GBL he worked in Viniti.

Automation of Information—Library Work at Scientific and Technical Libraries of the USSR by

Aleksandr Sergeevich Sorokin
Director, USSR State Public Library for Science and Technology

General Session I
Automation of Libraries and Information Services in the United States
Tuesday, 5 July 1988
13:30—15:00

A.S.Sorokin, V.M.Rostovtsev

The USSR State Public Library
for Science and Technology
(GPNTB SSSR)

AUTOMATION OF INFORMATION-LIBRARY WORK AT SCIENTIFIC AND TECHNICAL LIBRARIES OF THE USSR

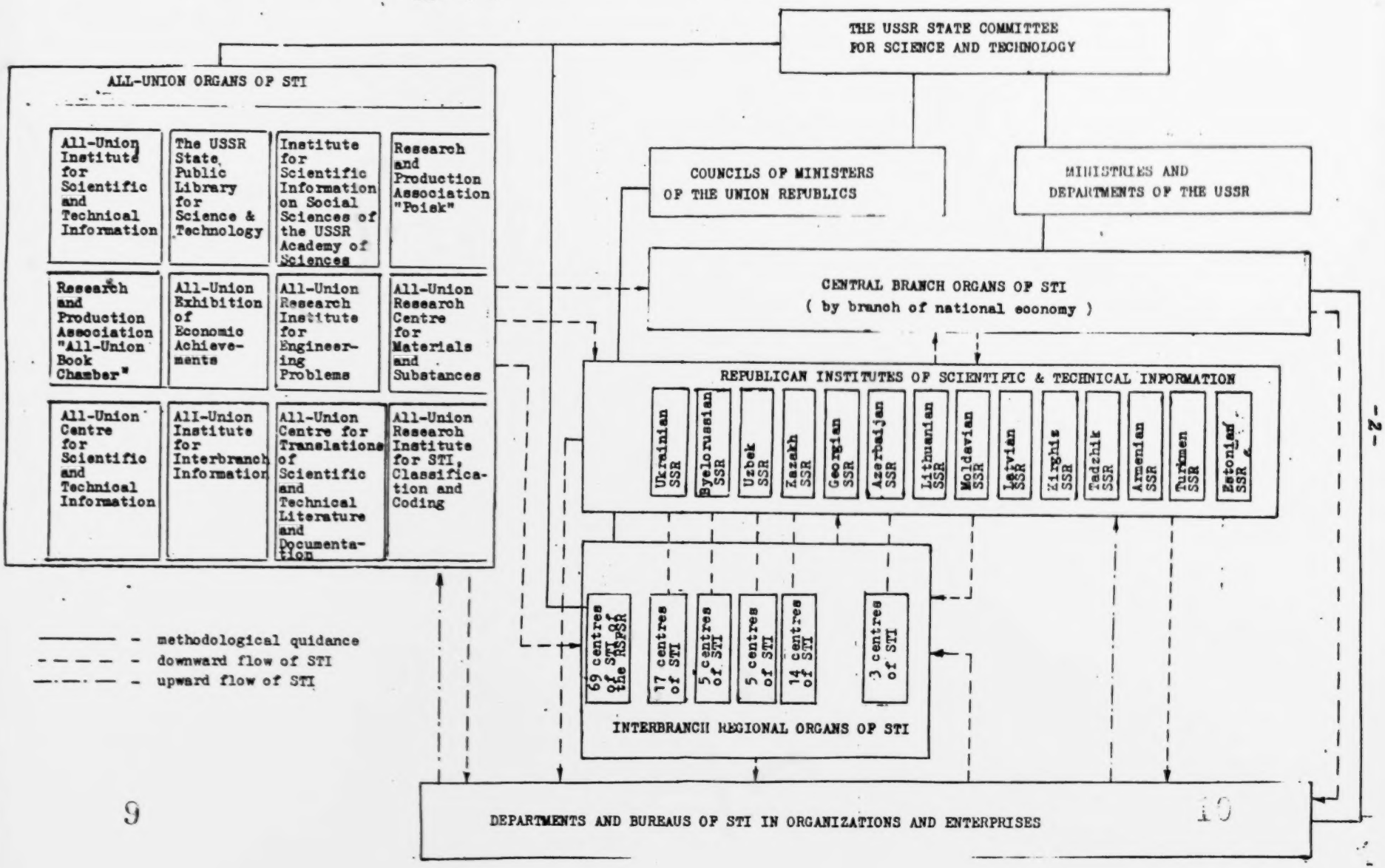
The place of scientific and technical libraries in the Statewide STI System (GSNTI)

The current process of automation occurring in the Statewide STI System (Fig. 1) provides for simultaneous development and interaction of automated and traditional forms of the work done by STI bodies. It should be noted that automated technology is widely used by the country's information bodies of all levels, and its share is steadily growing. The country is establishing a qualitatively new "information environment" which includes computer-based data banks, information exchange on magnetic tape and telecommunication modes of accessing information.

Within the framework of its Statewide STI System the Soviet Union has established and operates a network of scientific and technical libraries which build up multi-subject and problem-oriented collections of sci-tech literature and other documents, and organize for this entire stock reference tools, depository storage of literature and documents, as well as library and information service of specialists engaged in science and production.

001 8

THE STATEWIDE SYSTEM OF SCIENTIFIC & TECHNICAL INFORMATION


THE USSR STATE COMMITTEE FOR SCIENCE AND TECHNOLOGY
ALL-UNION ORGANS OF STI
All-Union Institute for Scientific and Technical Information
The USSR State Public Library for Science & Technology
Institute for Scientific Information on Social Sciences of the USSR Academy of Sciences
Research and Production Association "Poisk"
Research and Production Association "All-Union Book Chamber"
All-Union Exhibition of Economic Achievements
All-Union Research Institute for Engineering Problems
All-Union Research Centre for Materials and Substances
All-Union Centre for Scientific and Technical Information
All-Union Institute for Interbranch Information
All-Union Centre for Translations of Scientific and Technical Literature and Documentation
All-Union Research Institute for STI, Classification and Coding
COUNCILS OF MINISTERS OF THE UNION REPUBLICS
MINISTRIES AND DEPARTMENTS OF THE USSR
CENTRAL BRANCH ORGANS OF STI (by branch of national economy)
REPUBLICAN INSTITUTES OF SCIENTIFIC & TECHNICAL INFORMATION
Ukrainian SSR
Byelorussian SSR
Uzbek SSR
Kazakh SSR
Georgian SSR
Azerbaijan SSR
Lithuanian SSR
Moldavian SSR
Latvian SSR
Kirghis SSR
Tadzhik SSR
Armenian SSR
Turkmen SSR
Estonian SSR
69 centres of STI of the RSFSR
17 centres of STI
5 centres of STI
5 centres of STI
14 centres of STI
3 centres of STI
INTERBRANCH REGIONAL ORGANS OF STI
DEPARTMENTS AND BUREAUS OF STI IN ORGANIZATIONS AND ENTERPRISES
- methodological guidance
- downward flow of STI
- upward flow of STI

THE STRUCTURE OF SCIENTIFIC AND TECHNICAL LIBRARIES NETWORK
IN THE STATE SYSTEM OF SCIENTIFIC AND TECHNICAL INFORMATION

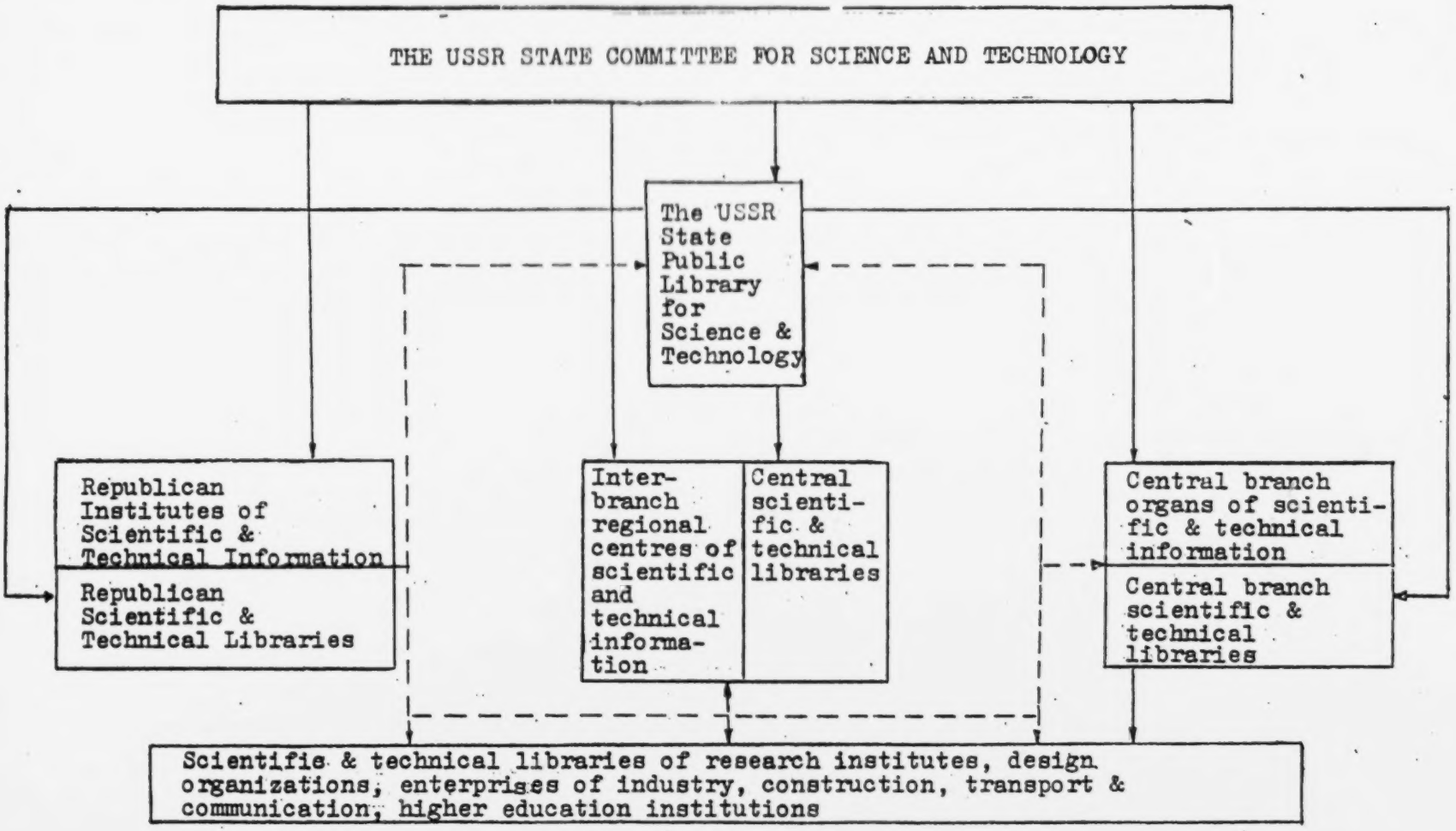

THE USSR STATE COMMITTEE FOR SCIENCE AND TECHNOLOGY
The USSR State Public Library for Science & Technology
Republican Institutes of Scientific & Technical Information
Republican Scientific & Technical Libraries
Inter-branch regional centres of scientific and technical information
Central scientific & technical libraries
Central branch organs of scientific & technical information
Central branch scientific & technical libraries
Scientific & technical libraries of research institutes, design organizations, enterprises of industry, construction, transport & communication, higher education institutions
——— - methodological guidance
– – – - library and information service

FIG. 2

The network of scientific and technical libraries is a multi-level structure (Fig. 2) including All-Union, republican and discipline-oriented libraries, as well as those of research and design organisations and enterprises. The All-Union libraries which contain 50 per cent of the GSNTI libraries' stock account for over 80 per cent of the total number of copies produced and for over 50 per cent of documents provided through interlibrary loan.

The GSNTI scientific and technical libraries interact with libraries of the system of the Ministry of Culture and of the USSR Academy of Sciences, as well as with other libraries and STI bodies in such fields as the acquisition of republican, regional and discipline-oriented reference-information collections, organization of depository and exchange holdings, mutual use of library holdings in fulfilling orders received from enterprises, organizations and individual specialists, bibliographic work and development of methodological and normative documents.

Libraries are the last link in information service, since, in the long run a specialist turns to a library for a primary source he needs; therefore, today he has the right to demand that a library system should be as prompt and efficient in meeting his needs as modern computer-based information systems are in providing information service.

Automation of library work

Automation of library work and the establishment of library-information systems are a part of the national programme aimed at setting up a statewide computer-based system of scientific and technical information.

8

The USSR State Public Library for Science and Technology (GPNTB SSSR) is an active and leading participant in this programme; it is a qualitatively new kind of library institution performing the functions of the national scientific and technical library and the All-Union STI body.

GPNTB SSSR has a unique stock of domestic and foreign literature which runs into 10 million items. Annually the Library and its branches receive about 400,000 various publications, including 70,000 copies of books and serials, about 120,000 copies of foreign journals, 7,000 titles from 47 countries and over 70,000 copies of translations of scientific and technical literature.

Over 250,000 readers and 14,000 individual and collective interlibrary loan (ILL) subscribers use the services of the Library; annually the Library fulfils over one million requests for copies of primary sources.

It is obvious that library-information service of such a size with a limited number of personnel would be practically impossible without automation. The projects dealing with GPNTB automation are carried out by researchers and the information-computer centre equipped with a complex of computer and telecommunication facilities.

The establishment and development of the GPNTB computer-based system provides for automation of both inter-library processes (ranging from the order and processing of literature to the management of services provided to the Library's readers and subscribers) and information activities.

The development of software and hardware for all systems designed by GPNTB was based on the following principles of

integration and unification of the information technology:

- unified pre-machine format;

- unified procedures of data collection and preparation aimed at combining online data input and batch processing;

- unified principles of organizing and maintaining reference information;

- use of unified software (ISIS) and hardware.

Today GPNTB operates a complex of automated library-information technologies.

Subscription to domestic and foreign journals for the GPNTB collections and its branches (2,000 and 7,500 journal titles respectively) is computerised; a computer monitors the time taken to fulfil ILL orders (about 150,000 annually) and orders for copying of literature (up to 400,000 annually). Work is being done to automate processing of foreign books (10,000 - 12,000 copies per annum) and unpublished translations (over 70,000 per annum) received by GPNTB, and to design appropriate online catalogues.

Computers are also used to provide information-reference service and to coordinate international book exchange. To this end, the Library maintains the data bases devoted to:

- cancelled and concluded agreements on international book exchange;

- an index of foreign organizations issuing literature in a given subject field.

These data bases are used to prepare mock-ups of printed indexes and various references and lists, to design covering letters and distribution lists.

As the computer-based system developed at GPNTB automated work stations were established to serve the storage department using domestic micro-computers.

The main online functions are as follows:

- registration of inquiries;
- putting of inquiries on a waiting list;
- location of a publication issued;
- registration of the items on loan;
- current control over the time-lag allowed to keep the items on loan;
- analysis of and control over the use of the collection.

The data bases necessitated by the automated technological process are also used in the service division to prevent sending orders for the items on loan to the storage section, and to promptly locate the item on loan.

Further development of the above operations is linked with the application of promising domestic models of the 16-bit micro-computers, such as DVK-4 and ES-1841 which compare favourably with the currently used micro-computers both with regard to internal memory and peripheral devices and the software which allows to integrate the processes and data bases in the local network.

Automation of library-
-information systems

It has already been mentioned that GPNTB is an information body of the country's Statewide STI System.

As an automated information centre of GSNTI (Fig. 3) GPNTB is responsible for the establishment of data bases covering foreign books and periodicals, as well as domestic literature

THE USSR STATE PUBLIC LIBRARY FOR SCIENCE AND TECHNOLOGY – THE ALL-UNION COMPUTERIZED INFORMATION CENTRE

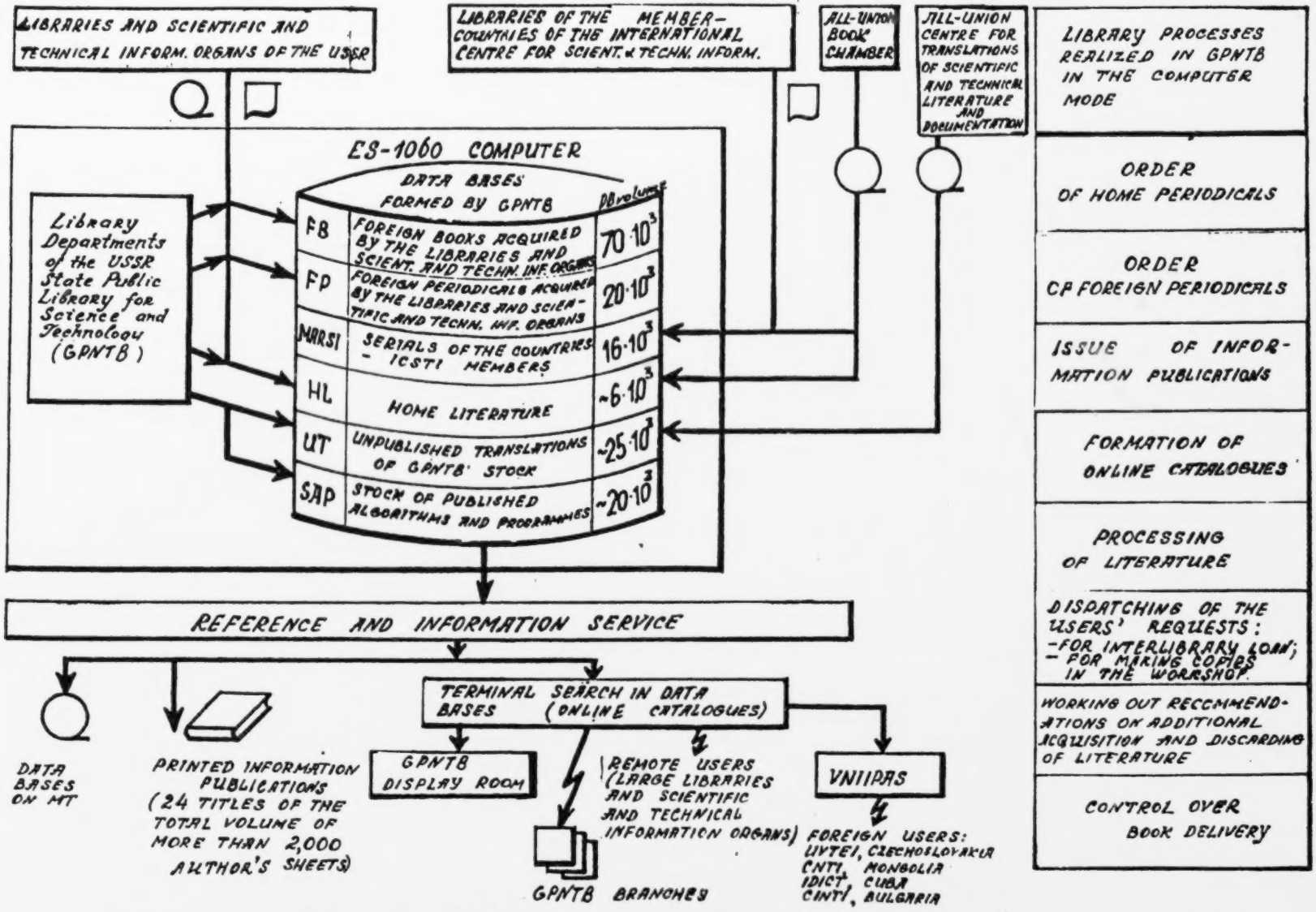

LIBRARIES AND SCIENTIFIC AND TECHNICAL INFORM. ORGANS OF THE USSR
LIBRARIES OF THE MEMBER-COUNTRIES OF THE INTERNATIONAL CENTRE FOR SCIENT. & TECHN. INFORM.
ALL-UNION BOOK CHAMBER
ALL-UNION CENTRE FOR TRANSLATIONS OF SCIENTIFIC AND TECHNICAL LITERATURE AND DOCUMENTATION
ES-1060 COMPUTER
DATA BASES FORMED BY GPNTB
DB volume
FB
FOREIGN BOOKS ACQUIRED BY THE LIBRARIES AND SCIENT. AND TECHN. INF. ORGANS
70·10³
FP
FOREIGN PERIODICALS ACQUIRED BY THE LIBRARIES AND SCIENTIFIC AND TECHN. INF. ORGANS
20·10³
MARSI
SERIALS OF THE COUNTRIES – ICSTI MEMBERS
16·10³
HL
HOME LITERATURE
~6·10³
UT
UNPUBLISHED TRANSLATIONS OF GPNTB' STOCK
~25·10³
SAP
STOCK OF PUBLISHED ALGORITHMS AND PROGRAMMES
~20·10³
Library Departments of the USSR State Public Library for Science and Technology (GPNTB)
REFERENCE AND INFORMATION SERVICE
TERMINAL SEARCH IN DATA BASES (ONLINE CATALOGUES)
DATA BASES ON MT
PRINTED INFORMATION PUBLICATIONS (24 TITLES OF THE TOTAL VOLUME OF MORE THAN 2,000 AUTHOR'S SHEETS)
GPNTB DISPLAY ROOM
REMOTE USERS (LARGE LIBRARIES AND SCIENTIFIC AND TECHNICAL INFORMATION ORGANS)
VNIIPAS
GPNTB BRANCHES
FOREIGN USERS: LIVTEI, CZECHOSLOVAKIA CNTI, MONGOLIA IDICT, CUBA CINTI, BULGARIA
LIBRARY PROCESSES REALIZED IN GPNTB IN THE COMPUTER MODE
ORDER OF HOME PERIODICALS
ORDER OF FOREIGN PERIODICALS
ISSUE OF INFORMATION PUBLICATIONS
FORMATION OF ONLINE CATALOGUES
PROCESSING OF LITERATURE
DISPATCHING OF THE USERS' REQUESTS: – FOR INTERLIBRARY LOAN; – FOR MAKING COPIES IN THE WORKSHOP
WORKING OUT RECOMMENDATIONS ON ADDITIONAL ACQUISITION AND DISCARDING OF LITERATURE
CONTROL OVER BOOK DELIVERY

FIG. 3

acquired by the scientific and technical libraries and STI bodies, and for the provision of access to them through various channels.

Libraries and information bodies send to GPNTB data on the domestic and foreign books and periodicals they have acquired, and GPNTB builds up and supports appropriate data bases which provide prompt access to the distributed collection of primary sources. Depending on the libraries' technical facilities and on the level of library automation GPNTB is getting information about new accessions on different kind of media such as working sheets, magnetic tape, as well as via telecommunication lines.

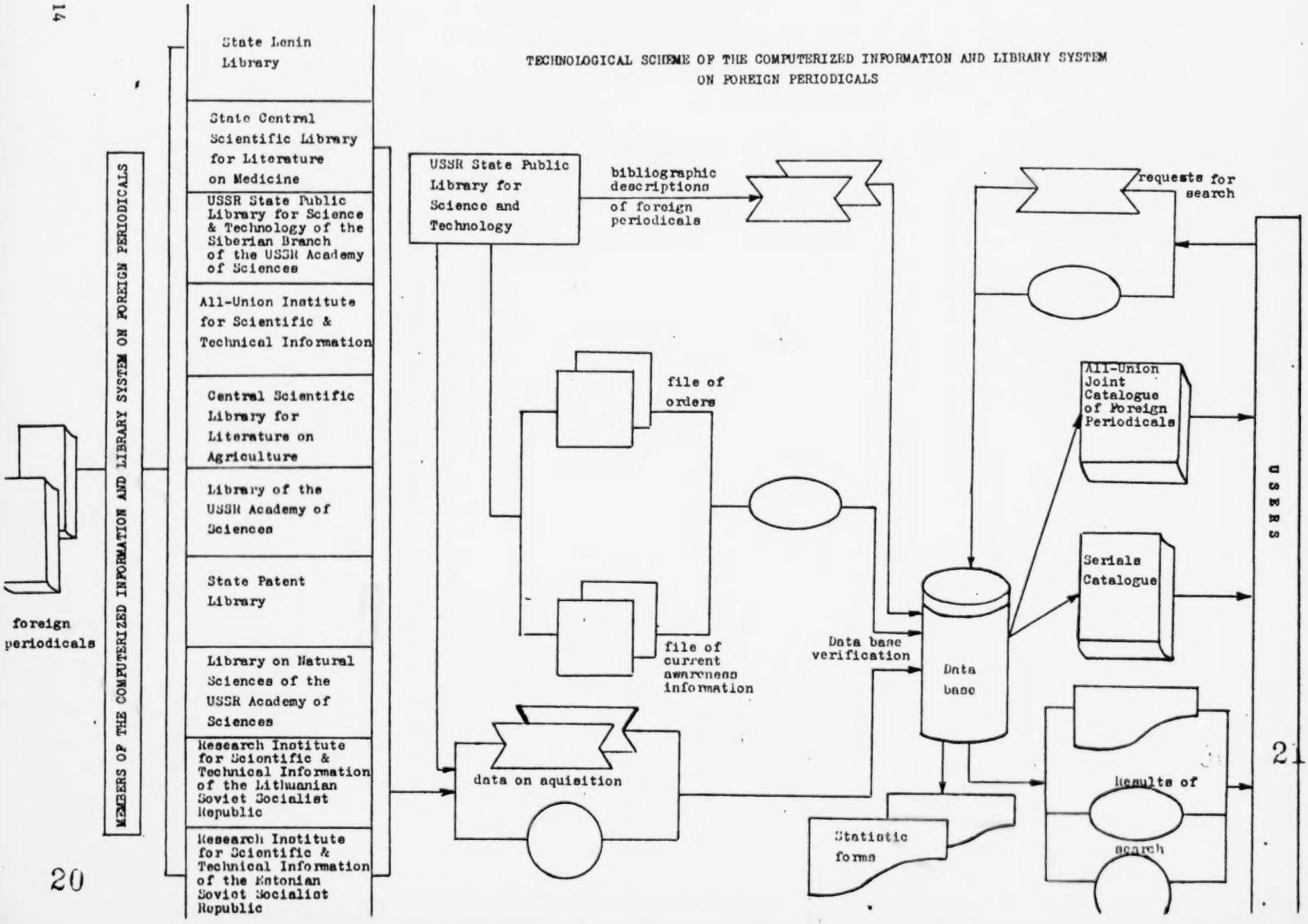
Data bases on foreign books and periodicals are built up within the framework of the Automated National System of Library-Bibliographic Service about Foreign Publications consisting of two subsystems.

The data base on foreign periodicals (Fig. 4) contains information about foreign periodicals in natural sciences, technology, agriculture and medicine to which the Soviet Union's organi ations have subscribers. As of the end of 1987 the data base had contained 25,000 records of publications, the annual addition is about 1,000 records.

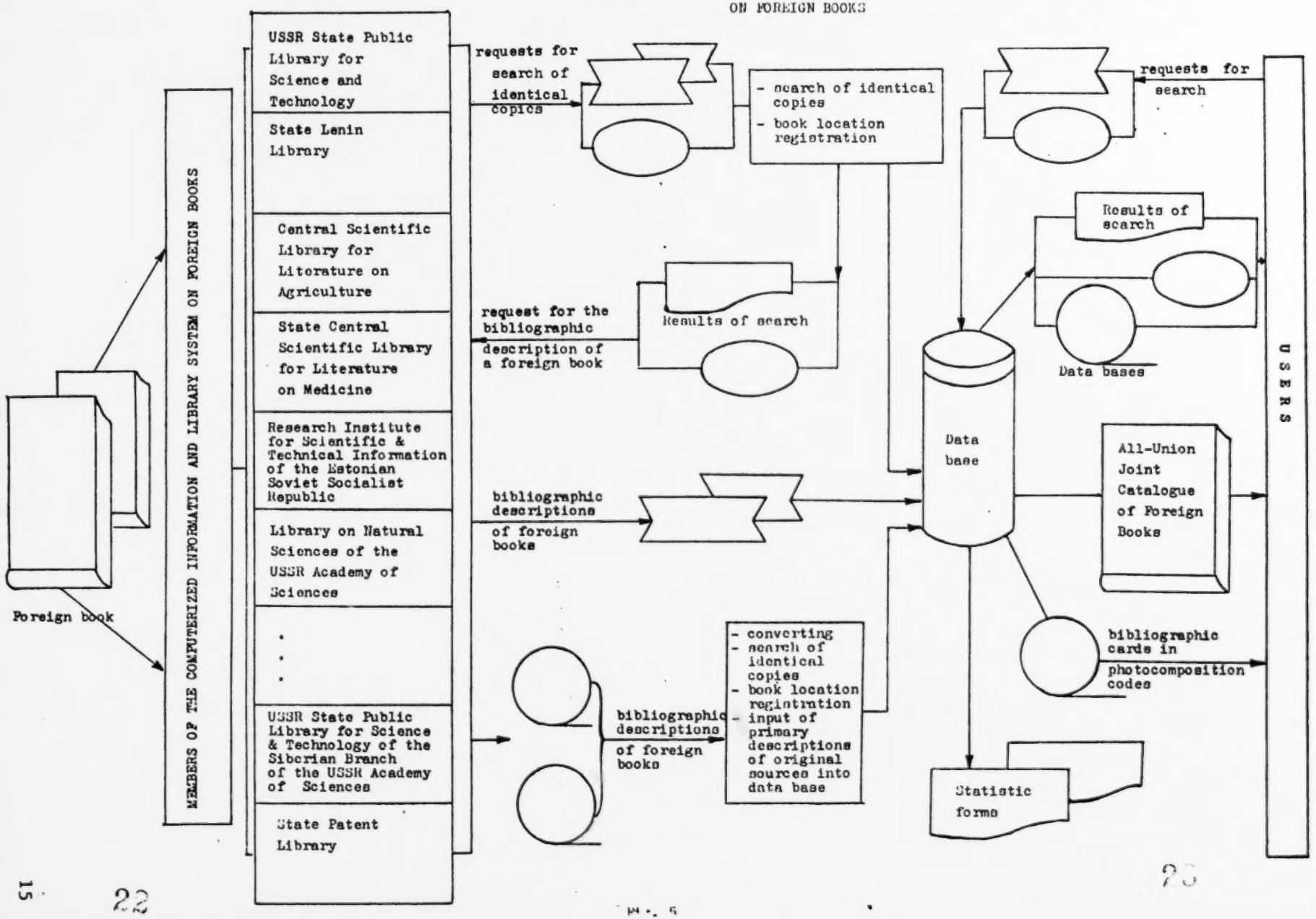
The data base on foreign books (Fig. 5) contains information about foreign books in natural sciences, technology, agriculture and medicine received by the country's libraries and STI bodies. Annually, about 70,000 records of new accessions are entered into the data base. Over 200,000 records have been entered into the retrospective data base.

The data base on published materials about algorithms

TECHNOLOGICAL SCHEME OF THE COMPUTERIZED INFORMATION AND LIBRARY SYSTEM ON FOREIGN PERIODICALS


foreign periodicals
MEMBERS OF THE COMPUTERIZED INFORMATION AND LIBRARY SYSTEM ON FOREIGN PERIODICALS
State Lenin Library
State Central Scientific Library for Literature on Medicine
USSR State Public Library for Science & Technology of the Siberian Branch of the USSR Academy of Sciences
All-Union Institute for Scientific & Technical Information
Central Scientific Library for Literature on Agriculture
Library of the USSR Academy of Sciences
State Patent Library
Library on Natural Sciences of the USSR Academy of Sciences
Research Institute for Scientific & Technical Information of the Lithuanian Soviet Socialist Republic
Research Institute for Scientific & Technical Information of the Estonian Soviet Socialist Republic
USSR State Public Library for Science and Technology
bibliographic descriptions of foreign periodicals
file of orders
file of current awareness information
data on aquisition
Data base verification
Data base
Statistic forms
requests for search
All-Union Joint Catalogue of Foreign Periodicals
Serials Catalogue
Results of search
USERS

TECHNOLOGICAL SCHEME OF THE COMPUTERIZED INFORMATION AND LIBRARY SYSTEM ON FOREIGN BOOKS


Foreign book
MEMBERS OF THE COMPUTERIZED INFORMATION AND LIBRARY SYSTEM ON FOREIGN BOOKS
USSR State Public Library for Science and Technology
State Lenin Library
Central Scientific Library for Literature on Agriculture
State Central Scientific Library for Literature on Medicine
Research Institute for Scientific & Technical Information of the Estonian Soviet Socialist Republic
Library on Natural Sciences of the USSR Academy of Sciences
USSR State Public Library for Science & Technology of the Siberian Branch of the USSR Academy of Sciences
State Patent Library
requests for search of identical copies
- search of identical copies
- book location registration
request for the bibliographic description of a foreign book
Results of search
bibliographic descriptions of foreign books
bibliographic descriptions of foreign books
- converting
- search of identical copies
- book location registration
- input of primary descriptions of original sources into data base
Data base
requests for search
Results of search
Data bases
All-Union Joint Catalogue of Foreign Books
bibliographic cards in photocomposition codes
Statistic forms
USERS

and computer programs (Fig. 6) is based on the Library's collection, containing data about algorithms and programs, and renders service to specialists of the national economy. The size of the data base amounts to about 25,000 records.

GPNTB takes part in the activities of the International System of Scientific and Technical Information of the CMEA member-countries which provides for optimal organization of information support of cooperation programmes in priority areas of the Comprehensive Programme of Scientific and Technical Progress of the CMEA Member-Countries up to the Year 2000.

The data base on serials is built up within the framework of the International Computerized Registry System of the Member-Countries of the International Centre of Scientific and Technical Information. The data base includes data about serials issued in the countries participating in the System: Bulgaria, Cuba, Czechoslovakia, the GDR, Hungary, Mongolia, Poland, Romania and the USSR.

The size of the data base amounts to about 19,000 records, the annual addition being about 1,000 records.

To provide access to the above data bases GPNTB has set up a terminals network (Fig. 7) including:

- a display hall serving the Library's readers;
- a number of data terminals set up at the GPNTB branches;
- a number of data terminals set up in big Moscow libraries;
- a number of data terminals located in selected organizations and research institutes.

The number of users increases, as the network provides access to organizations which have their own terminal devices

TECHNOLOGICAL SCHEME OF THE FUNCTIONING

OF THE DATA BASE ON PUBLISHED ALGORITHMS & PROGRAMS

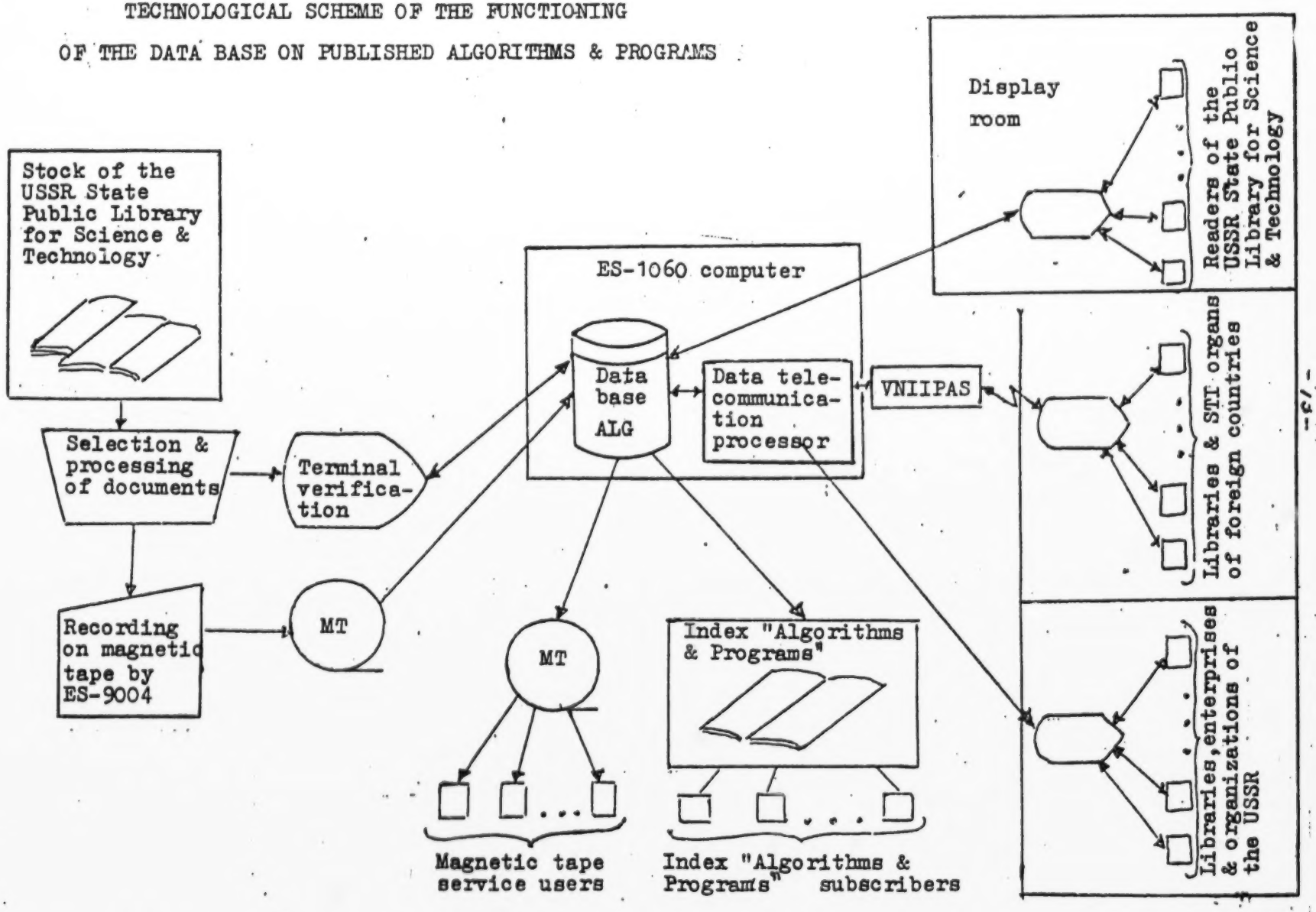

Stock of the USSR State Public Library for Science & Technology
Selection & processing of documents
Terminal verification
Recording on magnetic tape by ES-9004
MT
ES-1060 computer
Data base ALG
Data tele-communica-tion processor
VNIIPAS
MT
Index "Algorithms & Programs"
Magnetic tape service users
Index "Algorithms & Programs" subscribers
Display room
Readers of the USSR State Public Library for Science & Technology
Libraries & STI organs of foreign countries
Libraries, enterprises & organizations of the USSR

Fig. 6

TELECOMMUNICATION NETWORK
OF THE USSR STATE PUBLIC LIBRARY FOR SCIENCE AND TECHNOLOGY

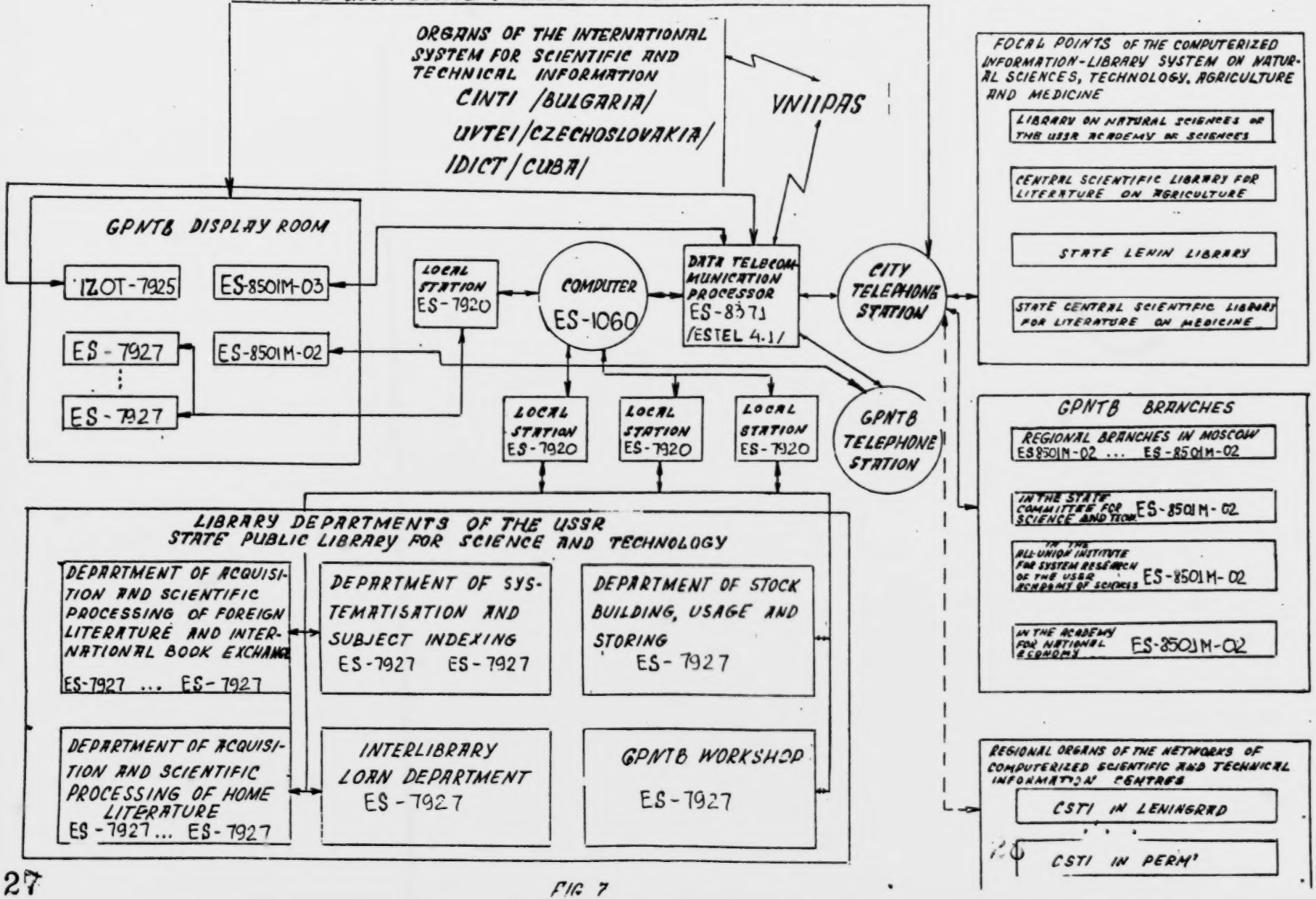

ORGANS OF THE INTERNATIONAL SYSTEM FOR SCIENTIFIC AND TECHNICAL INFORMATION
CINTI /BULGARIA/
UVTEI/CZECHOSLOVAKIA/
IDICT/CUBA/
VNIIPAS
FOCAL POINTS OF THE COMPUTERIZED INFORMATION-LIBRARY SYSTEM ON NATURAL SCIENCES, TECHNOLOGY, AGRICULTURE AND MEDICINE
LIBRARY ON NATURAL SCIENCES OF THE USSR ACADEMY OF SCIENCES
CENTRAL SCIENTIFIC LIBRARY FOR LITERATURE ON AGRICULTURE
STATE LENIN LIBRARY
STATE CENTRAL SCIENTIFIC LIBRARY FOR LITERATURE ON MEDICINE
GPNTB DISPLAY ROOM
IZOT-7925
ES-8501M-03
ES-7927
ES-8501M-02
ES-7927
LOCAL STATION ES-7920
COMPUTER ES-1060
DATA TELECOMMUNICATION PROCESSOR ES-8371 /ESTEL 4.1/
CITY TELEPHONE STATION
GPNTB TELEPHONE STATION
LOCAL STATION ES-7920
LOCAL STATION ES-7920
LOCAL STATION ES-7920
GPNTB BRANCHES
REGIONAL BRANCHES IN MOSCOW ES8501M-02 ... ES-8501M-02
IN THE STATE COMMITTEE FOR SCIENCE AND TECH ES-8501M-02
IN THE ALL-UNION INSTITUTE FOR SYSTEM RESEARCH OF THE USSR ACADEMY OF SCIENCES ES-8501M-02
IN THE ACADEMY FOR NATIONAL ECONOMY ES-8501M-02
LIBRARY DEPARTMENTS OF THE USSR STATE PUBLIC LIBRARY FOR SCIENCE AND TECHNOLOGY
DEPARTMENT OF ACQUISITION AND SCIENTIFIC PROCESSING OF FOREIGN LITERATURE AND INTERNATIONAL BOOK EXCHANGE
ES-7927 ... ES-7927
DEPARTMENT OF SYSTEMATISATION AND SUBJECT INDEXING
ES-7927 ES-7927
DEPARTMENT OF STOCK BUILDING, USAGE AND STORING
ES-7927
DEPARTMENT OF ACQUISITION AND SCIENTIFIC PROCESSING OF HOME LITERATURE
ES-7927 ... ES-7927
INTERLIBRARY LOAN DEPARTMENT
ES-7927
GPNTB WORKSHOP
ES-7927
REGIONAL ORGANS OF THE NETWORKS OF COMPUTERIZED SCIENTIFIC AND TECHNICAL INFORMATION CENTRES
CSTI IN LENINGRAD
CSTI IN PERM'

FIG 7

operating through public telephone network.

GPNTB readers can conduct information searches both independently and with the assistance of a consultant. The readers wishing to conduct independent searches undergo special training.

In the future access is to be provided from the GPNTB display hall to abstracting data bases of other information centres of the country.

Under international cooperation agreements organizational and technical work have been done to provide teleaccess to the GPNTB data bases for foreign libraries and information centres. GPNTB has also access to foreign data bases via telecommunication network through the National centre of computerized exchange of information of the USSR - the All-Union Research Institute of Applied Automated Systems (VNIIPAS).

In 1987, experimental sessions were conducted with organizations of Yugoslavia, Hungary, Czechoslovakia, Mongolia, Cuba and other countries through the GPNTB - VNIIPAS channel. At present, the Library is beginning to apply commercial modes of using its data bases.

GPNTB is providing data bases on magnetic tape for interested local and foreign organizations. In 1985, the size of the information provided on request amounted to 1.1 million records, in 1986 - over 1.4 million records, in 1987 - about 2 million records. The current number of subscribers is about 60.

GPNTB prints and disseminates on subscription a wide range of information publications, which are produced by

means of computerized technology using data bases and electronic photocomposition:

- annotated index "Algorithms and Programs";
- All-Union general catalogue of foreign books;
- All-Union general catalogue of foreign periodicals;
- an index of new foreign books;
- an index of new foreign accessions;
- a register of serials of the member-countries of the International Centre for Scientific and Technical Information.

The total volume of GPNTB information publications issued by means of automated technology amounts to about 2,500 author's sheets.

Prospects of development

The major promising directions of the development of literature and information processing at GPNTB involve large-scale application of mini- and micro-computers and necessitate the development of the telecommunication network to exchange data in the system of sci-tech libraries and STI bodies. The use of mini- and micro-computers poses the problem of optimal distribution of data bases at two interconnected levels: the level of an intergrated bibliographic data bank on mainframe ES computers and the level of specialized data bases on mini- and micro-computers.

To organise information exchange in required technological modes it is planned to develop software and master hardware for interface of computer complexes of various levels. In other words it necessitates the establishment of a local inter-library computer network.

The data bases distributed by the country's information bodies are used by many libraries both as "semi-finished products" in order to create online catalogues for their own collections (for instance, the data bases of the "Bibliography" automated system generated by the All-Union Book Chamber) and to render information service to readers, in particular, to reveal the content of various kinds of publications. To date, due to the possible application of telecommunication modes of accessing information and exchanging data, GSNTI is in a position to automate not only certain technological processes in libraries but also the technology of their interface both with organizations-intermediaries (Soyuzpechat, "Mezhdunarodnaya Kniga" foreign trade association) in tackling acquisition tasks, and among themselves in operating the ILL system, in creating master catalogues systems etc.

To ensure a more rational use of library resources and the saving of funds, GPNTB prepares methodological guidelines encouraging other libraries to make practical use of the projects which are implemented by GPNTB. Thus, GPNTB has already introduced in a number of libraries and STI bodies its own project solutions stipulating the operation of an automated subsystem dealing with subscription to domestic and foreign journals, control over fulfilment of ILL requests, the technology of constructing sectoral and regional master catalogues, and some others.

However, only few of the many standard project solutions are oriented at practical use in medium- and lower-level libraries, since initial R&D projects were intended for mainframe computers and powerful software. This, in turn,

could be explained by the fact that GPNTB until recently had lacked the hardware which allows to design multi-level distributed data processing systems of modular type. At present and in the near future mini- and micro-computers are an accessible and effective means of automating medium- and lower-level libraries. Personal computers are used as a means of automating bibliographic work and as intellectual terminals to access GSNTI information resources. In this field certain results have been achieved by a number of sci-tech libraries which, apart from participating in the functioning of All-Union library-information systems, carry out pre-machine processing of sources and complete the cycle of information service in automated republican, sectoral and regional STI systems.

The short-term development of automated library-information systems provides, in part, for:

- the establishment by sci-tech libraries of new data bases as a result of the introduction of computerized technology for the processing of various kinds of literature on the basis of bibliographers' automated work stations;

- the development of telecommunication modes both in rendering reference-information user and reader service at home and abroad, and in transmitting orders for primary sources and/or their copies;

- the improvement of the organizational and functional structure of the All-Union library-information systems by switching over to distributed processing of literature based on telecommunication network technology of information transfer;

- provision of publications on nontraditional media - diskettes, compact disks, and so on.

GPNTB is going to increase its effort in creating standard technologies and software for information processing which can be used by other libraries, above all, by those of the medium and lower levels. Orientation of these technologies at modern information computer and telecommunication facilities accessible to all libraries opens up broad prospects of computerising library-information work at all levels of the sci-tech library network, and of providing to libraries access to all GSNTI resources, as well as those of foreign networks and data banks.

Automated Information System for Culture and Art

by

A.P. Volik
Deputy Director, Lenin State Library of the USSR

A.P. Repin
Head of the Informculture Sector, Lenin State Library of the USSR

General Session I
Automation of Libraries and Information Services in the United States
Tuesday, 5 July 1988
13:30—15:00

The Second U.S.S.R-U.S. Seminar "Library Technology and Preservation as a Means of Providing Access to Library Resources"

AUTOMATED INFORMATION SYSTEM FOR CULTURE AND ART

A.P. Volik, deputy director
A.P. Repin, head of the Informculture sector,
the State Lenin Library of the USSR

Moscow-Vilnius
1988

AUTOMATED INFORMATION SYSTEM FOR CULTURE AND ART

By A.P. Volik, A.P. Repin

The development of cultural management on a scientific basis, the promotion of contacts between researchers and organisers of cultural life, and rational scientific exchange and practical experience by means of information ties betwee different branches of science, management and practice depend to a large extent on the level of development of the information system in a particular field.

In 1972 the USSR started up the formation of a national information system for culture and art (Informkultura). The State Lenin Library of the USSR has become its central body o information, what with the establishment of a special scientific and research department to analyse and generalise information on culture and art (the Russian abbreviation NIO Informkultura). It is also engaged in organising a system of information service and establishing a network of information bodies at different levels.

What distinguishes this system is that it was created first and foremost on the basis of major universal and specialised scientific libraries of the country and had an opportunity to make use of their rich book stocks on culture and art.

Within the framework of Informkultura the information data is processed on the theory and history of culture and art, the fine arts, music, the performing arts (theatre, circus and variety show), on cultural and education work,

museum management science, protection and restoration of historical and cultural monuments, librarianship and material and technical supply for the cultural establishments.

Informkultura is a component part of the State system of scientific and technical information of the USSR, something which determines its basic principles of activity: the unity of organisational, methodological and technological solutions for all the information services, which are part of the national system; the single treatment of information sources fed into a system and multiple use of the processed results in reference and information service; centralisation of system control; centralisation of information publications of general character.

In cooperation with the All-Union State Library of Foreign Literature, the State Central Theatrical Library, the Scientific Taneyev Music Library, the Moscow Tchaikovsky State Conservatoire and other libraries, the State Lenin Library of the USSR annually prepares about 300 issues of current bibliography, reference and scientific-analytical accounts and express-information bulletins.

Information publications are prepared on the basis of the annual processing of 10,000 national and foreign books, 210 titles of Soviet publications and 870 titles of foreign periodical and continued publications in 21 languages of the world.

To promote efficiency and effectiveness of this work on the basis of scientific and technological progress the State Lenin Library of the USSR elaborated an automated culture and art information system (the Russian abbreviation AIS Soyuzkultura). In 1982 it was put into operation.

The system has an integral automated data bank, which in its turn includes data banks on culture, art, librarianship and on a material and technical base of culture. The input of entries is carried out from work places of bibliographers, indexers and editors by means of video terminals. Mock-ups have been worked out for stage-by-stage input of basic types of documents with subsequent automated formation of bibliographical entry.

Inforkultura provides a broad variety of information services, including servicing in conditions of selective promulgation of information, request-answer, preparation and release of information publications on the basis of laser print and photocomposition, duplication of information files on magnetic tapes. Today preference is given to selective promulgation of information and to publications. These services considerably coincide with the traditional elements of library-bibliographic service but are based on a cardinally different character of work with information data. Proceeding from the fact that information service is carried out on the basis of polythematic data bank, users get concentrated information, which reflects the present level of branch knowledge rather than a selective list of documents found by chance.

To resolve this task a whole package of measures is used which includes a thorough selection of documents fed into the data bank according to the worked out criteria as well as a variety of linguistic means to make it possible to index documents adequately and to perform purpose-oriented reference and information service.

The linguistic support of the system is composed of the rubricator on culture and art and an amount of thesauruses.

The rubricator consists of pragmatic hierarchical classification designed to establish the limits of information retrieval, to systematise information in information publications, to exchange information files on the subject matter of a particular branch on magnetic tapes with information services of this branch as well as with the bodies of the state system of scientific and technical information of the USSR.

Subject retrieval and specific searching in the data bank of the automated system of information Soyuzkultura are carried out by means of thesauruses, which contain 25,000 lexical units referring to culture and art.

In order to organise international exchange of information it is necessary to coordinate the language means. To this end Informkultura is engaged in linguistic support modernisation. A national variant of the international thesaurus on cultural development has been worked out for the UNESCO, and the international rubricator on culture and art for the socialist countries.

Today there is a considerable increase in factographic information retrieval service which is prompted by the necessity to make services granted to the users more varied , for example, to give on request not only references to the relevant documents but to provide the required data contained in those documents. In this context the State Lenin Library of the USSR is working out a factographic information retrieval service on culture in the data bank of which digital and textual information will be fed to be used in the dynamic mode i.e., processed with the help of arithmetic and logical operations in order to be provided to the users in the form of graphs, dynamic arrays, etc.. The factographic information retrieval system makes use of the object-sign language the basis of which consists of real objects, abstract notions, events and relations in the cultural sphere. Taking into account the tendencies towards integration of documental and factographic information retrieval systems, the prerequisites are being created for the establishment in the near future of an expert system with elements of artificial intellect.

Since the USSR and other socialist countries have a number of automated information systems, which process information on culture and art, efforts have been taken recently to coordinate their activities within the framework of the culture and art information network. It is based on the principle of cooperation when information is processed. This principle presupposes distribution of the processes of procession and storage of information among separate units of the information network which makes it possible to use more fully and efficiently the advantages of different systems and

technical means. This cooperation is aimed at enlarging the number of tasks for procession, evaluation and provision of information; at reliably ensuring communication processes; and at providing the users with suitable technical means and programmes to ensure access to information and control over information processes. What is most important is that new services will function on the basis of the existing automated information systems with special importance attached to such factors as compatibility, flexibility and efficiency of the used means.

Compatibility within the framework of information networks calls for compatibility of technical means, software, telecommunication, network hardcopy logs, organisational and legal issues, provision of services and documentation for the users. Since this network is oriented both toward Soviet and foreign users, the information network on culture and art meets the requirements of the reference model of interaction of open information systems which is built on the use of seven-level hierarchy of hardcopy logs of systems' interaction.

On the organisational plane the information network on culture and art consists of territorially spread and interrelated three-level information services: international, national and local.

At the international level interaction between the Soyuzkultura automated information system and the automated information system of the national bodies of the international system of scientific and technical information on culture and art, Interinformkultura. This interaction is carried out

within the framework of Interinformkultura automated information system, whose establishment can be assisted by any interested information organs. At the initial step the communicative format was worked out for information exchange on magnetic tapes, having as its basis the international communicative format of the socialist countries (State standard 7.19-85), which in its turn was created with due account taken of the international standard ISO 2709.

At the international level of the network interaction is carried out through lease of telecommunication and information-computer resources, which are provided by the International system of automated exchange of information between CMEA member-states. The transfer of data in this system is based on the communication package mode in conformity with the recommendation MKKTT X.25. The USSR has a national centre of the International system of automated exchange of information. This centre is responsible for connecting foreign users with the Soviet information resources, including with the data bank on culture and art.

Interaction of automated information systems within each country is carried out at the national level of the information network. In the USSR it is composed of a network of automated centres on culture and art with the State Lenin Library of the USSR as its main body. The State Lenin Library of the USSR coordinates the efforts aimed at creating documental and factographic data banks; works out the network's systematic, technological, linguistic support and software; performs input operations and carries out all kinds of reference-information servicing.

Culture and art information services incorporated in the network process distributed information flows on coordinated subjects and feed in the network's data banks in conformity with the special subject field of acquisition. They are guided by the principle of one-time input, which rules out duplication in processing the sources. The State libraries of Byelorussia, Lithuania and Georgia and the information centres on the material and technical base of culture also take part in data banks formation.

The subscriber terminal network based on terminal complexes of information users, for example, educational establishments and creative unions is set up at the local level of the information network.

Thus, the USSR has all necessary prerequisites for raising the efficiency of culture and art information service. The automated data bank on this subject, accessible in a telecommunication mode to all those who wish, including foreign users, is working on a permanent basis. Every year 60,000 entries are added to the data bank.

Taking into account the new possibilities which have opened up before Soviet and American libraries cooperation needs to be activated in information exchange on humanitarian subjects both on magnetic tapes and in a telecommunication mode. To this end the first Soviet-American workshop (Librarianship in the field of art and museum management science) will be conducted in the Soviet Union in 1988.

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The Automatized Preparation of State Bibliography
by

Iurii Vladimirovich Torsuev
Director-General, Research-and-Production Association, All-Union Book Chamber

General Session II
Databases: Issues in the Bibliographic Control of Information in a Computer Environment
Tuesday, 5 July 1988
15:45—17:00

USSR - USA seminar "Library Technology and Preservation as a Means of Providing Access to the Library Resources"

5-8 of July 1988

THE AUTOMATIZED PREPARATION OF STATE BIBLIOGRAPHY (TO THE QUESTION OF THE BIBLIOGRAPHIC INFORMATION EXCHANGE)

Torsuyev Yu.V., Cand. Sc. (Philosophy), Director-General, Research-and-Production Association "Vsesoyusnaya Kniznaya Palata" (The All-Union Book Chamber)

Washington, D.C., 1988

The USSR - USA Seminar: Library Technology and Preservation as a Means of Providing Access to the Library Resources.

Torsuyev Yu.V.,
USSR, Research-and-Production Association "Vsesoyusnaya Knizsya Palata"

THE AUTOMATIZED PREPARATION OF STATE BIBLIOGRAPHY

The state (or national) bibliography (as regards our country the bibliography is multinational) is one of the main functions of the system of unique institutions - Book chambers. The leading institution in this system is the All-Union Book Chamber created in 1917. Each Union republic has its own Book chamber conducting the work on creating the republican state (or national) bibliography.

The USSR state bibliography has covered a complicated and fruitful way of development.

The whole complex of the state bibliographic indices is the system of the top-level intended to meet the information requirements of the society in general.

At present the All-Union Book Chamber has become the basis for the formation of the Research-and-Production Association "Vsesoyusnaya Knisnaya Palata" (The All-Union Book Chamber) which includes the State Bibliography Centre, the Book Institute, the Book Publishing Management Centre of the USSR, the publishing and printing complex.

The association "The All-Union Book Chamber" is a research and methodic centre of the country in the field of state bibliography, centralized cataloging, press statistics, standardisation of the information and bibliographic documentation, book science, sociology of the book and reading, book-publishing control. It is also the centre of creating and publishing the state bibliographic and statistic information in the form of indices, printed catalogue cards and collections of statistic data on the press.

In the process of preparing the state bibliographic information the All-Union Book Chamber is closely connected with other divisions of the Research-and-Production Association dealing with the questions of working out the typology of editions, the branch terminology, the preparation of standards regulating publishing business and making up prognoses for the book-publishing development.

In my report I'd like to dwell on one of the aspects of our institution's activities - the preparation of bibliographic information. It is due to the fact that in 1987 there was created a united complex responsible for the preparation, publishing and dissemination of the state bibliographic indices and cards of centralized cataloging.

For 70 years of existence of the All-Union Book Chamber there has been established as it seems to us a rather harmonious (but not statical) system of the state bibliographic information.

The system of the state bibliographic indices (the Russian abbreviation is ГБУ) and of printed cards of centralized cataloging (the Russian abbreviation is ПК) reflects the infor-

mation on all kinds of printed editions. published in the USSR. The structure of the system of indices is conditioned by the division of bibliographic information included into different types. Complete and reliable information on all kinds of the Soviet press is issued for a year period - about 85.000 books and pamphlets, 20.000 synopses of theses, 220.000 articles from collections, magazines and newspapers.

The information on printed publications is given in a systematized order according to the established scheme of classification of literature which allows to group editions within all branches of knowledge. To meet the requirements in multiple-aspect information retrieval the state bibliographic indices have rather extensive reference aids.

The All-Union Book Chamber also carries on the registration of bibliographic materials which are published whether in an independent edition or as a part of an edition (unindependent bibliographic index). Such registration serves a basis for publishing an annual "Bibliography of the Soviet Bibliography".

An important aspect in the creation of bibliographic information is the publication of printed cards of centralized cataloging describing our home press. These cards are widely used in the country's libraries. They are published in sets, intended for different types of libraries and scientific and technical information organs. Full, partial and serial sets reflect information on books, articles and reviews from magazines. Synopses of theses are reflected in full and serial sets. Besides, there is a set published describing central newspapers' articles. The total annual number of printed cards is about 400 million copies.

The basis for creating the state bibliography information are sample copies of all types of editions, which are received by the Book Chamber from all polygraphic enterprises of the country.

After bibliographic processing the publications are sent for permanent storage to the Book Chamber division - to the USSR Press Archives which contain the collection of more than 67 million storage items - it is our national property.

The organization of work on creating bibliographic information is influenced to a great extent by scientific and methodic research in the field of the state bibliography. This research results in working out a series of instructional materials or manuals on the selection of literature reflected in the state bibliographic indices and printed cards and also on the problems of subject indexing systematisation and technology.

It is necessary to mention about the publication by our institution of a scientific-practical magazine "Soviet Bibliography". This magazine plays a certain role in organizing the bibliographic science in our country, contributes to the development of theoretical ideas and to the popularization of progressive ideas in vast bibliographic circles. The history of the magazine began in 1933, when the All-Union Book Chamber initiated the publication of a world-unique periodical collection on the questions of bibliographic theory and practice.

In the late 1970-s the All-Union Book Chamber proceeded to developing and introducing stage-by-stage an automated system of information processing, storage and output.

The development of the automated system was based on a number of principles. Some of these principles are common for all automatized control systems and some are influenced by a specific character of the Book Chamber as an object for automatisation. These latest include:

- the principle of systematic approach which demanded a comprehensive analysis of our institution's activities;

- the principle of new decisions, calling for a search of a new technology of handling the publications and preparing bibliographic indices and printed cards and requiring the solution of new problems and not simply a mechanization of traditional operations;

- the principle of the common information basis, which would provide a single input and muptiple and muptiaspect use of information;

- the principle of typification determining the development and use of typical solutions;

- the principle of a mobile system enabling the introduction of new decisions taken in the process of operating the system;

- the principle of conjunctior with other systems and use of their ready decisions.

The realisation of the principle of a single information input caused the necessity of developing and introducing a unified format for recording of bibliographic processing results, a pre-machine format of this record and an appropriate document - a coding sheet.

The basis for working out a pre-machine format was the MARC-format and also the principles of our home cataloging

practice were taken into consideration. Our efforts resulted in the creation of presently used MARC-type format with three-digit punctuation of fields, with the division of fields into components (subfields) in accordance with the requirements of the bibliographic description standard, based on the International Standard Bibliographic Description (ISBD). For machine processing and transfer of information on magnetic tapes the international communicative format is used. This format meets the requirements of the CMEA standards 4283-84 and 4269-83 and of the USSR state standard 7.19-85. Coding of information is carried out in accordance with the CMEA standards 360-76, 356-76, 359-76.

The automatized system is the basis for publishing printed cards with the bibliographic description of books. The publication of the state bibliographic index "Book Annals" is also automated. In the nearest future seven more editions will be published by means of the automated system including "Annals of Magazine Articles" and "Annals of Newspaper Articles".

Our automatized system is designed on the basis of a technical resources complex including the united system of electronic computers, our home-made phototypesetting equipment of the "Cascade"complex and videoterminals.

This will enable achieving a task of forming and maintaining a bibliographic data bank "The Soviet Book" which will contain the data on home editions. This will provide the possibility of dialogue information retrieval meeting the users' requirements and the information exchange with the interested organizasions at home and abroad.

The yearly exchange of magnetic tapes is about 70 thousand records on books and booklets. By the beginning of 1990-s this figure will increase up to 300,000. It will include the information on articles from serial publications.

There has been planned a programme of creating a network of state bibliography automated centres including the All-Union Book Chamber, republican book chambers, the organs of scientific and technical information on the press. Such a concentration of resources will raise the bibliographic practice to the higher level.

This will allow the republics to carry out bibliographic processing of the national literature in the languages of publication to the united data bank "The Soviet Book". Thus and so there'll be realized the principle of a single input of information and the range of information service will widen including the exchange of information on machine carriers and in teleaccess regime.

The bilateral or multilateral information exchange between countries realizing the basic principle of the Universal Bibliographic Control Programme guarantees not only a single input of unified data on national publications into local systems belonging to one organization or country but it also allows other countries or world regions to use these data through their own automated systems on an international scale.

This proposition makes us believe in the possibility of organizing a bilateral information exchange with our colleagues from the Library of Congress, so we would like to suggest that this question should be considered. The fact that we use in our automated system a MARC-type pre-machine format, a unified bibliographic description on the ISBD basis, the Universal

Decimal Classification (UDC) and almost a complete coincidence of our subject headings with yours - all that proves that there are real prerequisites for a fruitful information exchange between our two institutions.

Possible variants of work on the exchange of bibliographic information can be as follows:

- providing the transfer of information on magnetic tapes;
- providing a mutual access to the national bibliography data banks;
- providing mutual "pumping over" of the data bank information on current and retrospective files.

We can go further and set forth a programme of a stage-by-stage increase of the volume of information granted:

Stage I - the information on Soviet books published since 1985 (can be given in Russian beginning with 1989)

Stage II - the information on the articles from Soviet periodicals in Russian (beginning with 1990)

Stage III - the information on republican editions in the languages of the peoples of the USSR (beginning with 1995)

At present the information can be granted on magnetic tapes. The periodicity - once in three months on the basis of a bilateral treaty.

The All-Union Book Chamber is interested in exchange tapes with information on the English-language literature. This would be the development of one of its functions - that of the library collector, providing libraries and bibliographic institutions of this country with publications and bibliographic data.

The development of friendly relations between our countries and our concern about the perfection of information handling processes aimed at meeting the needs of the society are the token of establishing business contacts between the Library of Congress and the All-Union Book Chamber in the field of information exchange.

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Automated Bibliographical Processing of Documents in the Lenin State Library
by

Aleksandr Nikolaevich Vostrikov
Chief, Research Department of Automation, Lenin State Library of the USSR

General Session II
Databases: Issues in the Bibliographic Control of Information in a Computer Environment
Tuesday, 5 July 1988
15:45—17:00

LENIN STATE LIBRARY

AUTOMATED BIBLIOGRAPHICAL PROCESSING OF DOCUMENTS IN LENIN STATE LIBRARY.

Vostrikov A.N.

cand. sc (physics and mathematics)

Introduction

A lot of interesting papers, publications and monographs have emerged in the field of automated library and information processes. They contain information on a great variety of multifunctional and specialized systems and nets. We have every reason to think that at coming stages of automation process, especially in the field of librarianship, their variety will be increasing. However, principles and general ideas established in these systems and nets at present will keep their significance in future.

Theoretical comprehension of created and existing systems always brings to the analysis of techniques implemented by them, as well as to revealing of various regularities presenting with required degree of accuracy one or another library or information process. From scientific and practical points of view it is essential to formulate regularities and details of developed techniques on a rational basis. On the one hand it is reasonable to avoid excessive complications introduced by almost uncontrollable differences in the objects of the systems themselves. On the other hand it is required to include new additional elements into the techniques providing both penetration into the essence of automated processes and their development and perfaction.

Thus two principle points characterizing any system or net have been emphasized - principles and general ideas they are based on and techniques implemented by them. Both are of interest for any new design despite the existing spectrum of systems and nets.

In this paper mentioned above points are laid [illegible] basis of automated bibliographical processing of document[illegible] use of minicomput[illegible]-M-4030 in Lenin State Library (LSL). 1 [illegible]

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Described features of the automated technique result from the existing traditional processing of documents, from the ability to overlap various processing operations in time, as well as from the required control over availability of bibliographical records in real time. Some of the features are influences by the used hardware and software. Every aspect of this issue is given certain attention in this report.

Considering automated processing of documents it is necessary to bear in mind that it is an integral part of the LSL integral automated system 2-3 .

Traditional technique of bibliographical processing of documents.

More than 900 thous. copies of national and 180 thous. copies of foreign documents are processed in LSL annually.

Departments for the acquisition of national and foreign publications, cataloging and alphabetic catalog departments, systematic and subject catalog departments, storage department as well a a number of specialized departments such as theses department, department of printed music and sound recordings and newspaper department are engaged in traditional processing of documents. In th acquisition departments, cataloging department, department of catalogs and in the storage department documents to be stored in the main stock are processed stage by stage. In thc specialized departments documents for the specialized stock of LSL undergo complete bibliographical processing.

At the first stage of processing the documents are in the acquisition departments, where lots of books are compiled according t their language, way of processing, physical location and som e oth

attributes. Lots of books for the LSL main stock are transferred for further processing to the cataloging department where bibliographical description is recorded on a catalog card and then to the catalog department where classification indices and short annotations are added. After the last stage of processing which is in the storage department required number of xerocopies of catalog cards for catalogs and LSL cards is made.

Several weeks is required to prepare catalog cards on new accessions to LSL according to the described above technique. The reader,however, can get information about these documents as well as about the posiibility to order them with the help of the card file in the department of new accessions a week after the document is received.

Among the major drawbacks of the traditional technique a great number of manual operations, low quality of catalog card print and repeating of the same work by library departments as well as by libraries of the country should be emphasized.The invoice system used to transfer lots of the documents from one department to another and resulting in the fact that the time required for processing of one document is determined by the time required for processing of the whole lot is not effective as well.

Automated technique for bibliographical processing of the documents.

Automated technique is based on three major principles:

I) continuity, treatment of computerized means as direct development of traditional ones;

2) one-time processing of all accessions along with the entry of information required for its multiaspectual use;

3) use of bibliographical information about new documents from tapes provided by central data base generators with online processing of the documents 4 .

All new accessions are conventionally divided into two streams. The first stream consists of the documents for complete bibliographical processing, the second one consists of the documents the library already has information about on the tapes from the central data base generators.These streams are not separated physically however.Receiving a document a staff member of the library determines the way of processing and makes a note about it on the document or in a special form. Further processing technique is uniformal differentiating only as far as the content and the volume of entered information is concerned. Entry of the information about the document may be divided into four stages:

entry of formal and registrational data,

entry of bibliographical description,

entry of systematization and subject analysis data,

entry of the document occurance data (code number).

Information is entered directly from the processed document. Every document is given its registrational number protected by a check bit. Entry of the information at any stage begins with the entry of registrational number. After that data is entered according to the chosen by the processor pattern proceeding from the stream and the type of the document, as well as from the processing stage. The information may be entered both offline, independently of other processing stages, as well as with the use of displayed information prepared at other stages.

Entered information is recorded on a magnetic disc in the fil

with a tree-like structure where registrational numbers of the documents or the international standard numbers ISSN and ISBN play the role of the keys to the rcords.

Bibliographical records on tapes received by the library are converted into the format of the system and loaded into the file on a magnetic disc. As the documents arrive additional required information is added to the file.

Processing of multivolume editions and serials making up 20-25% of the new accessions differs from that of one-volume editions. A file of general parts including such information as generaltitle of the multivolume edition or the serial, place of publication, publishing house etc., is formedwithin the system. As the next volume arrives its specification is formed (information on a separate volume) and added to the general part. Presence of of the general part in the corresponding file is checked in the conversational mode. In case it is absent it is formed additionall;

Format of the bibliographical record

Format of the bibliographical record is determined by groupin(data elements in three blocks of fields 5 : the field of formal data, the field of bibliographical description elements, the field of content data.

Format is filled in correspondence with standing national star dards on bibliographical description of processed documents. It is customary to code data elements on three levels consisting of a lable (three symbol numeric code identifying the field), an indicator (two symbol numeric code giving additional information about the field) and an identificator (numeric code in combination with

delimiter, determining data within the field ,that is determining the subfield).

Encoding depth of entered information is determined proceeding from the multiformity of its use such as preparation and issue of catalog cards and information and bibliographical publications with various auxiliary indicators,load and search of the information in data base, preparation of stock taking inventories, as well as collection of statistical data.

The alphabet used in the format includes ~ 400 symbols.

Patterns for document processing

Pattern is a set of fields and subfields group codes displayed when the document record is being formed in accordance with the format of the bibliographical record. When required, names of fields and subfields such as "Entry status","Format of the document' "Way of acquisition of the document","Language of the publication" are displayed at the entry patterns instead of their codes. The fields codes of the bibliographical description elements are displayed in order determined by the rules for the composition of bibliographical description.Codes of these fields are ignored if the data element is absent in the description. At present 37 patterns are used to process new accessions, among them 12 patterns for map publications and 8 patterns for printed music. Retrospective collection is processed with the help of 14 additional patterns.

Service at document processing.

A certain number of requisites (fields and subfields as far as

format is concerned) where content presentation is standardizes or completed in processing may be discerned at any document. In such cases it is possible to resort to the system of "electronic" directories to fill the fields and subfields using the "HELP" procedure. These directories contain complete information about the elements of bibliographical record controlled by module II (registrational number of the document, ISSN, ISBN, code number) and by the structure.

A separate group of directories is allocated for fields and subfields with the coded content presented in a compressed form. With their help there may be chosen codes to enter the information about the form and the type of the document, as well as about the language, country, location symbol of the library etc.

To minimize manual keyboard entry of the data into the computer automated filling of a number of fields(date and time for example) is provided.

Formal logical check and error correcting

After the information has been set up, read and ,if required, corrected it is entered into the computer where it undergoes logical check. Registrational numbers, international standard numbers ISSN and ISBN as well as location symbol of the library are checked by the check bit. Besides numeric and alphabetic information is checked too. The formal logical check allows to adhere to the set processing procedure. According to studies 6 19% of all errors commited during the entry of the information are revealed by such a check.

When an error is revealed it is corrected in the conversatio-

nal mode on the basis of displayed message.

Following forms of correcting are possible:

reset of a record,a field, a subfield, a word, a symbol;

change of a word, a symbol;

insertion of a field, a subfield, a word, a symbol.

The schedule for document processing is checked daily with the help of the program. List of unprocessed documents is used by the dispatcher to find out and eliminate a cause of delay.

Software

Software for document processing has been developed on the basis of DIAMS (conversational multiuse system for SM computers) system 7 . The source language for DIAMS is formed on a modular principle and consists of the base language and problem oriented extensions. The MUMPS language (ANSI X.II.I-1977) is used as a basis for the base language. The standard is extended to optimize work with hierarchical data bases and in multiprocessing, to increase service facilities of the input/output, program edit, check out and text processing means.

The data in DIAMS system have hierarchical structures. The name and positional indices for separate levels of the structure are determined at the description thereof. Such description is equivalent to the presentation of multidimensional arrays where indices corresponding to the required levels of the structure are assigned.

The given above structure of the data in DIAMS system affords to form a hierarchical tree-like structure of the bibliographical

record where the registrational number of the document (or ISSN and ISBN) is a root of the tree and the fields and subfields of the bibliographical record are levels of the structure. In other words the fields and subfields of the bibliographical record including the fields of the root are presented as tree nodes. The nodes may contain both data and indicators to the lower level. The end nodes (leaves) contain the data alone. Accordingly physical memory is not assigned to the data absent in the structure.If required it is distributed dynamically.

DIAMS operational system has four basic modulus such as interpreter, time sharing dispatcher, data base supervisor and input/output monitor.

When at use the operational system is completely in the on-line memory taking 15-27 Kwords depending on the configuration of components. The rest of the on-line memory is distributed bitween system buffers for data exchange with peripheral equipment and the group of users with maximal number of 64. One group contains one operational program of the user called from the program library.

At present the program libarary for bibliographical processing of LSL documents contains several dozens of programs written in DIAMS source language and completely implementing the process.

Hardware

The described above technique for processing of documents and the software are implemented at computer complexes of minicomputers SM-1406 with average speed 200 thous. operations per second and operational memory of 256 Kbyte.

Minicomputers are provided with VTA-2000 and VDT-52100 displays

Files at magnetic discs ES-5061 with the capacity of 29 Mbyte and those at magnetic tapes SM-5300 serve as peripheral memory.

Retrospective file of bibliographical records is stored at magnetic tapes.

Use of bibliographical records

Bibliographical information entered into minicomputers is used to prepair statistical documents directly at the computers. The information recorded at magnetic tapes is transferred to other computers to prepair catalog cards and union catalogs in the form of a book.

Retrospective file stored at magnetic tapes is kept to be loaded into the new data banks including LSL electronic catalog. The file is also used to transfer bibliographical information to other libraries.

References

1. Востриков А.Н., Петренко Г.А., Шварцман М.Е., Трушина Л.Н. Автоматизированная система библиографической обработки документов Государственной библиотеки СССР им.В.И.Ленина // Информационный бюллетень 8-ой рабочей группы министеротв культуры социалистических стран. Библиотечеая техника и технология. - 1987. - №4. - С.29-43.

2. Алексеев Н.Г., Востриков А.Н. Состояние и основные направления работы по автоматизации Государственной библиотеки СССР им.В.И.Ленина // Тр. /Гос. б-ка СССР им.В.И.Ленина. - 1985. - Т.21. - С.92-105.

3.Алексеев Н.Г.,Аветисова Т.В.,Востриков А.Н. Состояние автоматизации информационно-библиотечных процессов в библиотеках стран-членов СЭВ (обзор) // Информационный бюллетень 8-й рабочей группы министеротв культуры социалистических стран. Библиотечная техника и технология. - I986. - № 2. - С.60-I05.

4.Михайлов А.И. и др. Распределенный автоматизированный банк данных и документов сети автоматизированных центров научно-технической информации / А.И. Михайлов, И.А.Болошин, Б.А.Кузнецов. - М.: ВИНИТИ, I985. - 28с.

5.Петренко Г.А., Трушина Л.Н. Особенности обработки изданий в АС ГБЛ //Тр. / Гос.б-ка СССР им.В.И.Ленина. - I985. - Т.2I. - С.I06-I09.

6.Белоногов Г.Г. и др. Результаты функционирования в ВИНИТИ системы обнаружения орфографических ошибок в режиме опытной эксплуатации // Вопросы информационной теории и практики. - I984. - № 5I. - С.24-44.

7.Диалоговая многотерминальная система для СМ ЭВМ. /В.П.Семик, Г.П.Остапенко,А.Л.Фридман, В.Е.Горский. - М.: Финансы и статистика, I983. - I60с.

8.MUMPS Standard Language ,ANSI XII.I, 1977. - 220р.

Экз. № 18 63/971-7 экз.
Гос. библиотека СССР имени В.И. Ленина

The Creation of Automated Information Library System of the USSR Ministry of Culture by

A.P. Volik
Deputy Director, Lenin State Library of the USSR

General Session III
National and International Issues in Library Networking
Wednesday, 6 July 1988
14:30—16:00

THE CREATION OF AUTOMATED INFORMATION LIBRARY SYSTEM OF THE USSR MINISTRY OF CULTURE
(State of the Art and Existing Problems)

Soviet-American Seminar
"Access to Library Resources through Technology and Preservation".

A. P. Volik
Cand. Tech. Sc.
Deputy Director of
State Lenin Library
(GBL).

Library System

Today accessibility and wide use of library stocks, as well as the quality of library service, is connected with the level of automated library technology, including its net aspect.

This report deals with the problem of automation of library and information processes to be used in the system of general scientific and public libraries of the USSR Ministry of Culture. It leads the field in the whole of library system of the Soviet Union.

Today the USSR Ministry of Culture and Republican Ministries of Culture are in charge of 112 thousand libraries that constitute 84% of the total number of general scientific and public libraries of the country. Their fund constitutes 900 mln units of printed matter and is stocked by 70 mln units every year. The total number of readers exceeds 116 mln people, book delivery is 2.6 bln books a year, more than 231 thousand people work in Soviet libraries.

Automation Problem

The growing amount of printed matter and its rising price create difficulties to libraries in most of the countries of the world. It is obvious and general known.

The report will cover the whole number of problems associated with automation of information of library processes to be applied in the USSR Ministry of Culture library system. One of them is that the level of technology used, as well as the organization of the library activities, do not provide for the adequate informational and cultural impact of the libraries that are determined by the tasks of perestroyka. It has also become clear that the growth by 10% of the libraries' personnel won't guarantee the necessary level of the library service quality, moreover it won't help to tackle with problems that will be caused by expected 100% increase by 2000 of the library funds. Only updating of library facilities and the use of modern technology would help overcome the above mentioned problems.

Automation of information processes and library technology is one of the means to minimize the gap between the demand in adequate library service and the ability to guarantee it. However the majority of libraries are isolated from each other, as they are finaced from different budgets (republican or regional, etc.). A great number of libraries and their sponsors did not show much enthusiasm to spend their money for quite expensive automation programmes, if the advantages of their application were not obvious.

First success brought about by the library automation inspired some of its adherents who thought that it would create "the time when our business prosper, our friends are trustworthy, our happiness is guaranteed", as Ambroz Birs described the future. However there was another point of view. Such optimis was considered groundless and harmfull. Today opposition to automation is still very strong.

Stagnation observed in science, industry and cultural life did not favour the introduction of new technology. On the other hand readers were not very demanding, though the readers' survey initiated in one of the towns showed that 78% of the library visitors were not satisfied with the library services.

Another reason to introduce automation into general scientific and public libraries functioning within the USSR Ministry of Culture is connected with the new approach to social and cultu-

ral spheres of life. Nowadays they are granted the priority in distribution of resources. That has opened the way to new technology and hardware into the libraries.

Social awareness of Soviet people, their active participation in the process of perestroyka, new perspectives for individual growth, glasnost, new achievements in international relations, etc., have triggered off people's interest in the better services of general scientific and public libraries. Readers demand good service considering its availability as one of the components and one of the most important characteristics of the present level of life. This we consider to be the third reason that has sped up the library process automation.

And finally experience of the countries of the world, primarily of the USA, in implementing up to date automated library technology has proved that libraries are in acute need of the local automated systems as well as computerized library networks. The need for automation is called for by economic reasons and the capabilities of new technology.

This is in brief what provoked in 1985 the decision to create Automated Information Library System of the USSR Ministry of Culture (AILS MC USSR).

This system is the first country network of integrated local library systems with the complete set of automated library functions. The AILS MC USSR concept envisages its integration with future library networks of the country on a voluntary mutually advantageous basis that in the long run would form a single national network.

AILS MC USSR Concept

The administrative and territorial division of the USSR as well as the location of libraries forming the library system of the USSR Ministry of Culture influences the structure of AILS MC USSR. It has a hierarchical structure of 4-5 levels: automated systems(AS) of State libraries (GBL, VGBIL), State Republican libraries (GRB), areal (some of the regional libraries in Republics with large territories), regional libraries (RL) and district libraries (CLS) (Fig. 1).

Regional automated system is formed by automated systems of all libraries belonging to this level: regional, territorial, republican libraries of Autonomous Soviet Socialist Republics, big district libraries.

In each Republic automated systems are integrated into republican automated system.

Republican AS together with automated systems of GBL and VGBIL constitute AILS MC USSR.

At each level the function of automated system is identified by its role in the system. For example, AILS MC USSR is a holder of the state data banks such as the catalogue "Russian Book of the 19th Century". It carries out the international and interlibrary loans (IL and ILL), coordinates the library system functions at the Republican level and its cooperation with automated library and information systems of other Departments. GBL controls AILS MC USSR, collects the data and carries out the analysis of information about the System, exercises management functions, prepares reports. At each level the same functions are exercised by respective libraries.

Automated functions of each local library system are determined by the needs of the respective leading library and those subordinate to it. It is noteworthy that within AILS MC USSR such functions as acquisition, book exchange, processing and issue of bibliographical publications are realized. It also deals with document servicing of readers, interlibrary loan services, bibliographical services and management. (Fig.2)

The number and composition of data banks may vary depending on the level of the local system. They may contain: electronic catalogue(EC), automated joint catalogues, document and photo automated data banks..

Regional electronic joint catalogues contain logograms of all libraries that has a particular publication. The storage time of information in data banks depends on its purpose.

AILS MC USSR maintains relations with external systems and organizations:

- automated system of joint reference and literature publication coordination, automated control system of book trade,

and some others (Fig. 3). Automation was introduced into cataloguing (the State Lenin Library offers it as on-line service), subscription to home and foreign publications (periodicals), interlibrary loan service, book exchange, and some others. The subsystem of service for readers was developed in GBL, however it was not implemented as the existing technology demanded high labour expenditure for the multiple input of publication information from the display keyboard. Libraries have implemented the technology of automated processing and publication of joint catalogues, catalogue cards and bibliographical publications. Databases containing bibliographical information as well as abstract bibliographical information on culture and art are reproduced on magnetic tapes. In GPNTB USSR and INION AN USSR there are halls where readers have the accessto the automated data banks via display units. Some of the libraries got the access to GPNTB USSR and VINITI data banks via communication channels, GBL is one of them.

The notable success of State libraries of Lithuania, Georgia, Byelorussia can be observed at the republican level of the USSR Ministry of Culture library system.

State libraries of Georgia and Lithuania use leased computers in their work. Byelorussian State Library uses magnetic tapes ASNTI "Soyuzcultura" recorded by GBL for user information services.

Some of the management problems have been resolved with the introduction of automated technology. They are: the analysis of readers and subscribers, reader's book demand recording and analysis, circulation of foreign journals, salaries calculation, collection and analysis of the data pertaining to the library activities, processing of reports etc.

One can say that automation brought positive results, however it did not influence the work of most of the libraries. It gave the impetus to the process of joint functioning and use of library funds, but up to date technology to be used in library automation does not correspond so far to the poor library facilities. That has slowed down the process of library automationand minimized its effectivenessas compared with

traditional library technology. Changes that we now observe in Soviet industry give us hope that they will soon reach our sphere.

Plans and their Realization

Automated processes developed in GBL, GPB named after Saltikov-Shedrin, VGBIL, State libraries of Georgia, Estonia, the Ukraine, Byelorussia are being integrated into AILS MC USSR that has been partly introduced in 1986. The Main Computer Centre of the RSFSR Ministry of Culture is developing new automated systems for the libraries of Volgograd and Tula, that have the regional status. They are also being integrated into the System. Data banks available at the present stage are listed in Fig. 4.

GBL is planning to buid-up data banks for;

- culture and art (in 1989);
- electronic catalogue of GBL (in 1991);
- maps and notes joint catalogue (in 1991);
- theses catalogue (in 1993);
- joint catalogue "Russian Book of the 19th Century" (in 1991);
- international catalogue of foreign series publications available in libraries of the COMECON countries (in 1989);
- International Standard ISO-812 "Abbriviation of Words and Word-combinations in Bibliographical Entry" (in 1989).

GBL realizes its functions within AILS MC USSR using HP- 3000 computer of different modifications. In future this information computer complex will be elaborated.

Future elaboration of AILS MC USSR envisages the following stages:

- at the second stage (1992 - 1995) the system will integrate all main republican libraries and about 20% of regional libraries;
- at the third stage (1996 - 2000) the system will integrate all libraries belonging to the USSR Ministry of Culture and the configuration of AILS MC USSR, as identified by its concept, will be completed.

The estimated cost of AILS MC USSR is 700 mln roubles in current prices.

Today technical task for the operation of AILS MC USSR at the first stage has been prepared, methodological guides for the participants of the project have been completed. The experiment to test the system model with the help of computer is under way. Information support of the library network and its future functions are being developed, transmission of data within the network is being researched.

Regional libraries maintain applied programmes for acquisition and processing of publications. These programmes envisage record filing for separate publications, acquisition control for duplicates, electronic catalogue filing and searching by attributes.

I would like to touch upon aspects of cooperation between libraries of the USA and those integrated into AILS MC USSR. One of them is the exchange of bibliographical information on magnetic tapes and optical memory disks or via channels of communication. Annually GBL catalogues are filled with 300 thousand bibliographical entries of home and foreign publications. Some of them might be of interest for American libraries. On our part we would like to obtain entries of foreign publications in UNIMARK format. This will entail the harmonization of UNIMARK and MEKOF-1 formats. All the above mentioned concerns other data banks, available or being developed within AILS MC USSR.

Another aspect of cooperation is the exchange of scientific information on the development and the implementation of automated library systems and networks. That applies to the joint development and control of linguistic aids and software, standards and minutes of information exchange, it also applies to joint research and experiments, exchange of technology and liguistic aids (thesauri, guides, classifiers), standards. It can also take form of joint meetings, seminars, conferences, exchange of publications in specialized journals.

To finish it up I would like to express hope that the creation of AILS MC USSR which will provide for the wider access to

to library funds, will favour international cooperation of libraries, thus contributing to the present information policies.

T H E STRUCTURE OF A I L S M C U S S R

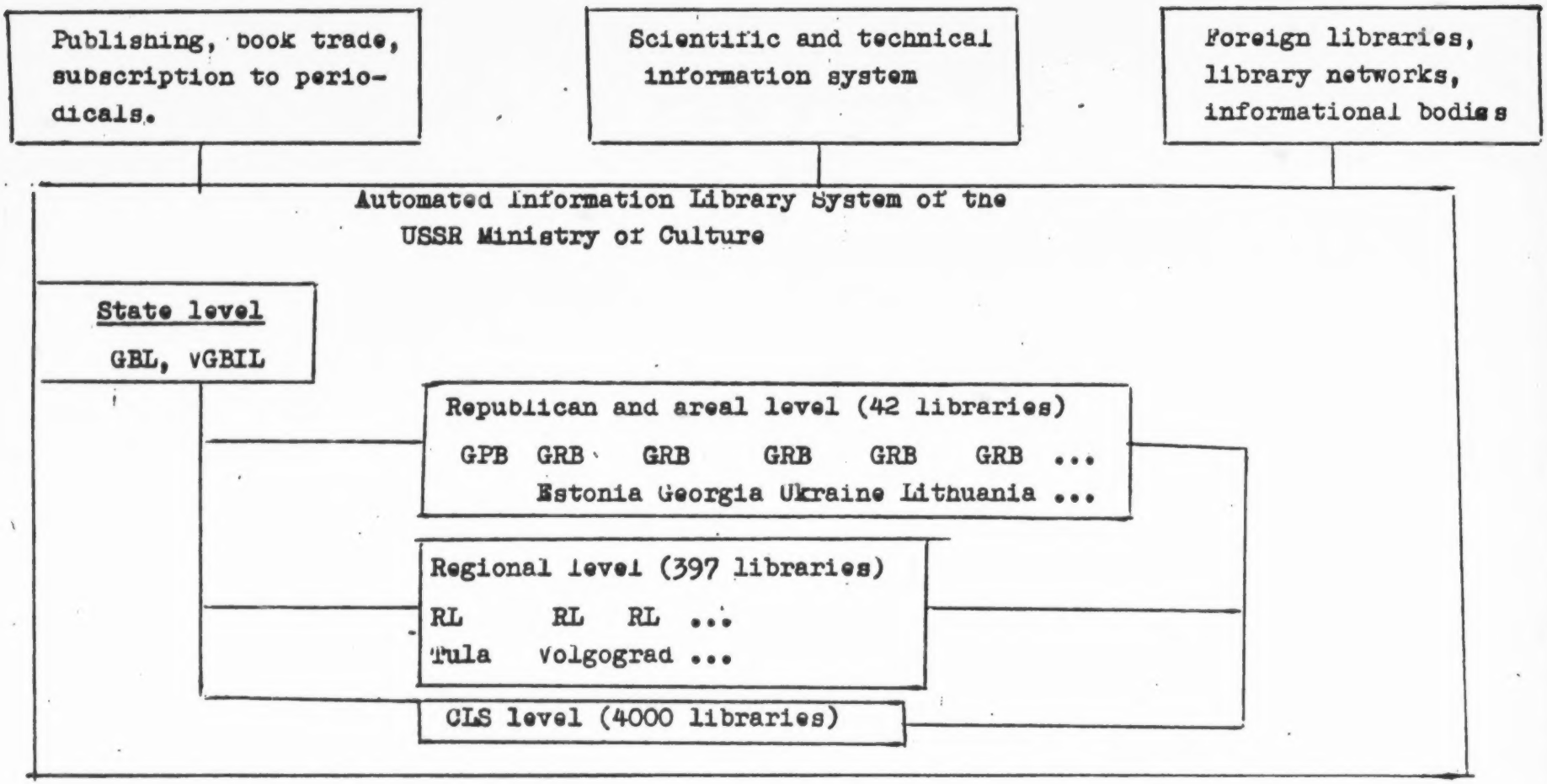
Publishing, book trade, subscription to periodicals.
Scientific and technical information system
Foreign libraries, library networks, informational bodies
Automated Information Library System of the USSR Ministry of Culture
State level
GBL, VGBIL
Republican and areal level (42 libraries)
GPB GRB GRB GRB GRB GRB ...
Estonia Georgia Ukraine Lithuania ...
Regional level (397 libraries)
RL RL RL ...
Tula Volgograd ...
CLS level (4000 libraries)

Fig. 1

MAIN FUNCTIONS OF AILS MC USSR

Functions	GBL	State level	Republican level	Regional level	CLS level
State book exchange	+	+	+	+	+
International book exchange	+	+	+	-	-
Centralized acquisition	+	+	+	+	-
Centralized processing of publications	+	+	+	+	-
Publication of guides	+	+	+	+	-
International loan	+	+	+	-	-
Interlibrary loan	+	+	+	+	+
Information and bibliographical service	+	+	+	+	+
Management	+	+	+	+	-

Fig. 2

AUTOMATED FUNCTIONS OF THE BIGGEST LIBRARIES

Automated functions / Libraries	GBL	GPNTB	BEN AN USSR
Home publications order	+	+	+
Foreign publications order	-	+	+
Home publications registration	+	+	+
Foreign publications registration	+	+	+
Home publications processing	-	+	-
Foreign publications processing	+	+	+
Issue of catalogue cards, registers, catalogues in a book form	+	+	+
Reader's survey	+	-	+
TV information service	+	+	+
Interlibrary loan control	+	+	+
Document control	+	-	-
Salaries calculation	+	-	+
Personnel control	-	-	+
System library activities data processing	-	-	+

Fig. 3

DATA BANKS AVAILABLE AT THE FIRST STAGE OF OPERATION OF AILS MC USSR

	GBL	VGBIL	GPB	GRB Ukraine	GRB Estonia	GRB Lithuania	GRB Georgia	GRB Byelorussia	RL Tula	RL Volgograd
Electronic catalogue	+	+	+	+	+	+	+	+	+	+
National bibliography	+	+			+	+				
Culture, art study of local lore	+		+						+	+
Environmental protection			+							
State and international book exchange	+									
Reference data banks	+								+	+

Fig. 4

AUTOMATED DATA BANKS OF THE STATE LEVEL

Data banks	Number of recordings (Thousands)		
	1986	1991	1996
Electronic catalogue	-	130	800
Theses	-	22	130
Joint catalogue of foreign notes and maps	-	2	12
Russian Book of the 19th Century	-	250	750
IS ISO 812	6	6	6
International book exchange	-	50	150
Culture and art	40	160	460

Fig. 5

The State Policy to Ensure the Preservation of the Library Stock in the Country

by

Nikolai Semenovich Kartashov
Director, Lenin State Library of the USSR

General Session IVA
Current Status of Preservation Programs
Thursday, 7 July 1988
13:30—15:00

THE SECOND U.S.S.R.-U.S. SEMINAR "LIBRARY TECHNOLOGY AND PRESERVATION AS A MEANS OF PROVIDING ACCESS TO LIBRARY RESOURCES"

THE STATE POLICY TO ENSURE THE PRESERVATION OF THE LIBRARY STOCK IN THE COUNTRY

Professor N.S.Kartashev,
Doctor of Pedagogics, Director of the USSR Lenin State Library

Moscow - 1988

THE STATE POLICY TO ENSURE THE PRESERVATION OF THE LIBRARY STOCK IN THE COUNTRY

N.S.Kartashev

Preserving in Order to Use

Every day librarians have to deal with the dilemma: to use or to preserve. The options are mutually exclusive. If the use of the stock is limited for the sake of preserving the materials in better condition, the readers are understandably the losing side. On the other hand, intensive use of the materials worsens their condition. Yet there is a way out of the dilemma. We must preserve in order to be able to use, and we must use with a mind to preserve. In other words, we must find the reasonable balance between preserving and giving access to the stock.

The problem of preserving the whole stock of national history, science and culture can be solved best in conditions of a unified library stock for the entire country. The creation of such a stock was legally authorized by the Library Regulations in the USSR passed on the Decree of the Presidium of the USSR Supreme Soviet in 1984. This unified stock incorporates the stocks of state libraries and libraries of public organizations. The concept and rules of a unified library system have been worked out. The creation of a unified stock is a natural stage in the process of libraries' integration which would ultimately lead to the establishment of a unified library system throughout the country. This implies planned management of the collection and use of the stock, i.e. a coordinated formation of the stock in accordance with a unified pattern of collection and a cooperative

principle of meeting readers' demands. The establishment of a unified library stock is a cardinal measure in the effort to preserve books in good condition.

Copies or Originals

Many libraries face an acute shortage of premises for storing books, therefore they have a perennial question to answer: What to store, the originals or their micro-form copies? No doubt, the transfer of information to modern high-capacity carriers (mainly optical numerical discs) will make the information safe and easily accessible. But there is another factor; the originals are also monuments of a certain historical period, while micro-forms are not. Modern technological devices are very efficient in servicing the reader. Yet we must not focus on the advantages of modern technology and modern materials alone, though it is so typical of man to look for the good things. The test of time will unveil the hidden disadvantages. At this point it is difficult to predict what problems the librarians of the future will have.

The preservation of information has become an acute problem as there is a growing amount of materials printed on poor quality paper which is wearing out rapidly by continuous use. Newspapers are published on a particularly poor paper.

Polluted atmosphere adds up to the misfortunes of the stored materials. So in order to preserve the stock we have to abide by the following rule: the original could be given to a reader only if one hundred per cent safety is guaranteed, otherwise readers' demands must be satisfied by copies. This rule applies first and foremost to rare and unique materials.

There have been intensive, albeit unsuccessful, efforts to ensure that libraries receive a long-lived copy for every material they have. Special types of neutral, durable paper have been created. However all attempts to publish at least a small portion of the output on this paper have run against a number of difficulties centering around the inevitable changes in printing technology. Yet we still hope for achieving a satisfactory, if not successful, solution to this problem. And the search for such a solution continues.

Assessing the Condition of the Stock

Importantly, the actual condition of the stock must be continuously evaluated for its durability planning. Criteria are now being worked out to make a proper assessment of the condition of the stock. They focus on the integrity of the stock and the condition of individual materials determining these on the basis of physical and chemical characteristics of information carriers. Critical and optimal counts and operational methods of their determination will be worked out.

The great variety of existing information carriers makes it very difficult to work out the criteria. Yet, as we see it, many libraries throughout the world have a vested interest in an early solution to this problem. Coordination and cooperation of the research both nationally and internationally would evidently be a welcome phenomenon.

Measures are also taken to establish a set of norms regulating the preservation of materials, the work which goes in close connection with the assessment of the condition of the unified library stock. Some state standards have already been worked out and introduced. They define a unit of the

stock of a library and of a scientific and technical institution, and the requirements for the storage and upkeep of materials. Unfortunately, not all libraries can meet these standards because they do not have the equipment to maintain the right temperature, humidity and lighting regime.

Technical Supply

It is impossible to preserve the stock without appropriate technical supply.

Technical refurbishing of libraries is a project under the National Programme. We in the State Lenin Library have already started reconstruction, intending to conclude it by 1995. We do not simply increase our grounds by modernizing the old and building new premises. Our main concern is to make cardinal changes in the system of our services and upgrade the preservation of the stock by introducing modern technology.

The refurbishing project incorporates all libraries that are part of the unified library system. Under the project, they will be supplied with special appliances for the upkeep, and equipment and materials for the restoration work. In 1987, the Inventory of Home-Made Equipment and Materials for Refurbishing the Departments (Sections) of Conservation and Restoration in Libraries was compiled. That same year the Inventory of Equipment for a Laboratory of Materials' Conservation appeared. The centralized supply issue is now under consideration.

However perfect and balanced those decisions may be, they lose their force unless they are backed up by appropriate financing and work. It is impossible to refurbish all

libraries straightaway. The problem can be solved on a stage-by-stage basis by using available means and methods to adjust the old premises.

Scientific Aspects of the Conservation of Materials

The Programme gives prominence to research into modern means, methods, materials and technology to improve the conservation of the library stock. The tasks are complex calling for joint efforts by chemists, physicists, biologists, technologists and other specialists. The research is conducted by laboratories at the State Lenin Library (GBL), the Saltykov-Schedrin State Public Library (GPB), the All-Union State Library of Foreign Literature (VGBIL), the republican libraries in Estonia and Lithuania, university libraries (in Moscow, Tartu and Vilnius), and the following organizations responsible for the preservation of museum and archive collections: the All-Union Scientific and Research Institute of Restoration (VNIIR), the Laboratory for the Conservation and Restoration of Documents of the USSR Academy of Sciences (LKRD), the All-Union Scientific and Research Institute of Documentation and Archives (VNIIDAD), the State Hermitage, the State Historical Museum, etc. The subjects of their research arise from their practical needs. They study the physical, chemical and biological causes and processes that lead to the impairment of documents and work out new and modernize the existing methods to combat those phenomena.

Each organization conducts its own basic research. The GBL has emerged as a leader in the conservation of the leather and parchment binding of antique books and parchment manuscripts. The laboratories at the GBL and VNIIR make a target-oriented study of the paper-eating insects.

The GPB has worked out new methods of restoration (e.g. lamination of newspapers and restoration of documents by filling in the missing parts with paper pulp). The LKRD probes into the optical and photographic methods of studying and renewing documents. The VNIIDAD examines the stability of manuscripts and texts typed in different colours and conducts R&D to determine the optimal temperature and humidity for the preservation of materials in different climatic zones of the USSR.

The GBL, GPB, LKRD, VNIIDAD and VNIIR study different types of microscopic fungi in order to find ways of protecting materials from the damage done by these microorganisms.

Fundamental research is conducted by specialized institutions and laboratories. An example of this is the work to protect the library stock from biological damage which is coordinated at the national level by Scientific Council for Biological Damage under the USSR Academy of Sciences. This framework enables libraries to have access to the achievements in this field and contribute to the research conducted by the institutes of the USSR Academy of Sciences.

Another example is provided by the effort to develop new restoration paper. This work involved the GBL, GPB, LKRD and a number of specialized institutions (the Central Scientific and Research Institute of Paper and the Wood Stock Management

Academy named after S.M.Kirov). The LKRD has worked out the technology of producing fine restoration paper of the type of the Japanese tissue waxing paper. As soon as minor differences are settled, this paper will be commercially produced and supplied to the restoration offices under the Ministry of Culture and the Glavarkhiv (The Central Archive).

Stability of Materials

Libraries have accumulated large stocks of modern publications whose future is by no means secure because of the poor quality of the paper and exposure to external damaging factors. To counter these factors, conservation methods are widely applied which lower the paper's acidity and neutralize its composition. Unfortunately, these reliable methods fall short of meeting the demands of libraries because they can be applied only individually, not on a mass scale.

Some countries have worked out methods of mass stabilization of documents through the use of organic solvents, but these are far from perfection. The research to develop a technology of mass stabilization of printed matter must therefore continue. We rank it among one of our priorities.

Yet the work to stabilize paper must be coupled with improved conditions of storage and use. The GBL expects to achieve the latter goal after the reconstruction of its premises.

Restoration and Microminiaturization

Restoration plays an important role in the overall effort to preserve library stock. Yet there is a gap between demand and supply in restoration work. Moreover, the gap is steadily

growing as libraries - even large ones - fail to respond to the imperatives of restoration. Large libraries try to find a way out in mechanization. The GPB has created a restoration moulding machine with a fully automated production cycle: it beats paper pulp and regulates its quantity, feeds and draws off water, dries and calenders sheets. At its production facilities, the Tartu University has started putting out semi-automatic restoration moulding machines.

Importantly, materials must go for restoration in the right order, i.e. priorities must be dictated by their value, not departmental interests.

The above-mentioned research conducted by Soviet libraries in the field of conservation is only a small portion of what they really do. It is impossible to outline in this small report the entire spectrum of research work done by all libraries belonging to different departments.

The conservation of materials is a good example to show that there is broad cooperation between libraries, archives, and agencies of scientific and technical information at all levels.

Miniaturization of the stock and wider use of microcopies instead of the originals is another important aspect of preservation. A unified national center for making microfilms of newspapers and supplying them to libraries have been established, and a state program for making microcopies will soon be drawn. A special report is devoted to this aspect which so far has not been given full attention in this country.

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Back-up stock

There must be a back-up stock of most valuable materials on microfilms to ensure that these are not lost in case the originals are damaged in fires, floods, failures of communication lines or other accidents. In the future, microfilms will be supplemented by optical discs. Yet both these types of information carriers are short-lived. That is why the back-up fund must be continuously taken care of and the copies renovated.

Certain libraries have worked out Regulations on the back-up stock, setting down the organizational principles, composition and order of copy-making. The order of making copies is determined by the importance of documents and their actual condition. Like all other types of stock, the back-up stock is subject to strict accounting and has its own reference directories. There are operational standards in the Soviet Union that compel librarians and caretakers of the back-up stock to abide by certain rules of storing materials on film carriers.

In accordance with the Principles of Conservation and Restoration of IFLA there must be a set of copies, some intended for use and the other for second copying.

The main idea behind the creation of the back-up stock is to preserve the information belonging to the national library stock. Therefore, not only rare and especially valuable materials must be preserved. The same goes for contemporary materials, though it is sometimes difficult to say straight away which materials will not lose their value in a matter of 50 or 100 years and which will be completely forgotten.

It stands to logic that facsimile copies should be made of especially valuable and rare materials. Facsimiles do not agree much with the principles of mobility and compactness of the back-up stock, but we've got to detract from the principles a bit in the interest of our cause.

Personnel Training

The program envisages intensive training of librarians in preservation management, instruction classes and refresher courses for restorers, and promotion of advanced techniques and the results of research. Restorers are now trained by individual libraries and laboratories. It is evident that this system of training is unsatisfactory for we still do not have enough restorers. The system must be changed. Initial training must be introduced at secondary and higher education establishments, while individual method is good only for improving qualification and in narrow areas of sophisticated restoration work.

Accounting and Inspection of the Stock

Preservation of the stock is a constant process starting from the moment materials get into the library and continuing thereafter over the entire period of storage and use.

There are various types of reference books in libraries to account for the materials they have, including those registering materials as they come and go, categorizing them according to the source of delivery, type of edition, branch of knowledge, language and other criteria, etc.

Still, accounting is far from being homogeneous. Certain libraries register newspapers in sets, others in titles; some register magazines in copies, others in titles, and so on

This situation was brought about by imperfections in the current State Standard called Units of Library and Scientific and Technical Information Agencies' Stock, which has a number of ambiguous provisions.

It is particularly difficult to compare data on the number and correlation of rare and valuable editions and manuscripts in different libraries for there has been no standard notion of "an item", a cornerstone for any statistical survey. At present, 300 book depositories are reassessing the stock of their ancient books. The work of libraries, archives and museums is being coordinated anew. In contact with the USSR Glavarkhiv, we have worked out Regulations for the Accounting of Manuscripts, governing the accounting, upkeep and use of manuscripts by libraries of the USSR Ministry of Culture. According to the 1986 survey of archive materials in the libraries and museums of the USSR Ministry of Culture, the 140 libraries have in their stock 3392 items of these materials.

In keeping with the existing procedure, libraries regularly examine their stock (once in one, three, five or ten years depending on the value of materials). This work is supervised by standing commissions on the preservation of the stock, which spot out negative phenomena and look for ways of their elimination.

Accounting and inspection are a necessary part of preservation, though insufficient for keeping the stock intact.

The program has a package of measures to prevent the loss of materials. Besides technical devices preventing pilfery, educational work, and improvements in the professional culture of librarians, there are also measures taken to enhance financial responsibility for the preservation of the stock in view of the fact that manuscripts, rare books and other materials are literary monuments (the USSR Law on the Protection and Use of Monuments of History and Culture passed in 1976).

The Draft National Program is still in the deliberation stage, which is evidenced by the fact that not all aspects of libraries' work have been analysed with due thoroughness. Individual research projects are still going on bringing the whole work closer to conclusion and perfection.

Annex

MAJOR PROJECTS WITHIN THE NATIONAL PROGRAM FOR THE PRESERVATION OF THE STOCK

The concept of preservation

The working out of fundamental documents and technical regulations

Current Activities	Activities in Perspective
Accounting	Creation of a unified library stock
Inspection	Assessment of the condition of the unified stock
Technological discipline	Technical refurbishing
Crackdown on pilfery	Creation of a back-up stock
Educational work	Research into conservation
	Increasing the scale of restoration work
	Personnel training and refresher courses

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Preservation of the Library Stocks in the Lenin State Library

by

Z.P. Dvoriashina
Laboratory Chief, Lenin State Library of the USSR

General Session IVA
Current Status of Preservation Programs
Thursday, 7 July 1988
13:30—15:00

Second USSR-US Seminar "Library Technology and Preservation of Book Collections as a Means of Ensuring Access to Library Stocks"

PRESERVATION OF THE LIBRARY STOCKS IN THE LENIN STATE LIBRARY

by Z.P. DVORIASHINA, laboratory chief of the Lenin State Library

Moscow 1988

Preservation of the Library Stocks in the Lenin State Library

by Z.P. DVORIASHINA

The State Library of the USSR named after Vladimir Lenin /LSL/ is the Soviet Union's largest depository of documents. As a social and cultural establishment the Lenin State Library collects, preserves and lends home and foreign publications, manuscripts and other documents on various types of information carriers, and will continue to do so in the future.

Responsibility

One of the main duties of the LSL according to the Regulations on Librarianship in the USSR adopted in 1984 is to preserve the library stocks which are the country's national treasure. This task of state importance is viewed not only as a social necessity but also as a kind of guarantee for the successful fulfilment by the library of its other functions.

Efforts to preserve the library stocks include the solution of such general problems as the improvement of the system of stock-taking, check-ups on the availability and state of documents, proper library arrangements, the creation of the stand-by fund and the fund of copies for lending, i.e. the questions which constitute the content of the librarians' day-to-day work. On the other hand, the preservation of library stocks involves a whole set of special questions which are dealt with by natural science specialists. The task of the latter is to elaborate science-based practical methods to ensure the durability of documents.

Responsible for the preservation of the library stocks are stock-holding departments and deaprtments to which documents are sent for processing, lending to readers, exhibiting or mending. The library departments have special regulations which to a certa-

extent ensure the preservation of the library stocks. A collection of instructions on the preservation of the LSL stocks has been issued. In particular, the stock-holders are guided by the document entitled "Requirements to the preservation of the book stocks in the LSL depositories".

General questions of preservation

It should be stressed that all the departments take their duty to preserve the library stocks very seriously. However, sometimes documents are lost, as a rule from the auxiliary stocks attached to the reading halls or on the way of a book from the depository to the reading hall or vice versa. The library organizes regular check-ups to see what publications are missing. The recent years have witness an increase in the scale of these check-ups. For instance, in 1986 450,000 copies were checked against the list of the basic book stock and 605 books have been found missing; within the first half of 1987 the availability of 800,000 has been checked and 890 have been found missing.

Checking the stocks is not an aim in itself. Besides checking on either availability or absence of books and documents, the possible causes for a loss are analyzed, the types of the most frequently lost publications are determined, as, naturally, the degree of damage and sufficiency of the measures for the protection of the library stocks. In accordance with annual and five-year plans, either sample check-ups or [illegible] check-ups are conducted. The most valuable stocks are checked at least once in five years ; those of rare books - once in three years, while the books and documents kept in safes are checked on an annual basis. The frequency of checking other stocks depends on their size. However, it should be conducted at least once in ten years.

Another methods of preserving stocks used by librarians is

stock-taking. In 1986 new Instructions on Library Stock-Taking in the LSL have been adopted, which are aimed at improving this type of library activity.

Commission on stock preservation

Works on checking stocks and stock-taking are supervised by a standing commission on stock preservation formed in 1980 and headed by a Deputy Director. With due account for the departments' proposals, the commission drafts annual plans of work. On the agenda of a commission's monthly session are, as a rule, two or three questions. What makes the commission's work thoroughly effective is the involvement in it of numerous specialists having to do with the problems of library stock preservation.

In 1981, the commission worked out and adopted Regulations on the Preservation of the LSL Stocks, which says in part: "The LSL stocks which in their totality are of great historic, cultural and scientific value are a national treasure and are subject to protection in accordance with the USSR Law on the Protection and Use of Historic and Cultural Monuments." For the first time these Regulations have established priorities in the preservation of each stock depending on its rarity, value and usefulness:

1st - the stock of monuments and the stock of rare and especially valuable books;

2nd - basic book stock;

3rd - stocks of specialized departments, with the exception of those mentioned in Point I;

4th - auxiliary stocks of the reading halls;

5th - exchange stocks.

Auxiliary stocks as a rule include most frequently used reference publications. Their purpose is to help preserve the basic stocks. A book or a document from the basic stock cannot be issued to the

reader if there is such a book or a document in the auxiliary stock. Exchange stocks serve to supplement the stocks of libraries at all levels, as well as for international book exchange.

All the stocks, with the exception of the auxiliary ones, are located in isolated rooms which can be entered only by the employees of the respective department or by persons in accordance with a specially compiled list. The restriction of the access to the stocks, both basic and specialized, is a means of ensuring their preservation.

Measures set forth in the Regulations guarantee supervision over the safety of documents in the process of mending, storing, copying and lending.

Copying and the stand-by stock

The library practises copying of its single copies /microfilms, microfiches, Xerox copies/; the copies of the most valuable and frequently used books and documents are duplicated. The copying of publications is strictly regimentated for this technological process is not completely safe for the documents. Rare, especially valuable and most frequently used publications can be copied only once.

Besides, the libraries have a well-adjusted system of microfilming. Microfilms are used to form a stand-by stock. The latter is a model of the basic stock and is created in coordination with the All-Union Book Chamber.

The stand-by stock is made up of copies of the documents selected in accordance with the lists compiled by the stock-holding departments. For each document stock different principles of selection are used. For instance, when selecting rare and unique stocks, as well as the date of the document creation or publication is considered, the value of the information it contains, the author and the artistic

features of the document. The sequence of copying is established in accordance with the stock's priority.

The requirements to the quality of copies and their storage are determined by the respective standards current in the USSR.

Research into document conservation

Simultaneously with the organization in the library of a practical service for the cleaning and restoring stocks, a research laboratory has been set up. It comprises specialists in chemistry and biology. The staff of the laboratory are engaged in the research into purely practical problems. However, it has become clear, that the solution of many practical questions requires the elaboration of the fundamental theoretical problems. Exactly such an approach is characteristic of the laboratory's research work in recent times.

Generally speaking, our task is to determine the causes of document damage and to search for ways to either eliminate this damage altogether or to reduce its harmful effects to the minimum. In fact, with the forty years after the foundation of the laboratory, not a single acute problem remained untackled and all the urgent requirements of stock-holders and restorers have been attended to. However, main efforts of the laboratory staff have been concentrated on the problem of ensuring the prolonged safe keeping of the most valuable part of the stock - rare and valuable publications and manuscripts. In such cases when the efforts of the LSL are not suffice we secure the cooperation of researchers from institutes of paper, leather, chemical industries and other departments.

Chemical research

It so happened that the LSL laboratory, more than other organizations, is engaged in studying the problems of conservation of leather bindings of ancient books and manuscripts. The deterioration of leather bindings is caused both by mechanical factors and by the

processes within the leather itself. The natural disintegration of leather can be prevented by means of a timely and proper softening. Methods have been worked out for softening rigid and brittle leather by mechanical treatment and introduction of oily compositions. Earlier, conservation lubricants have been created which were based on animal and vegetable oils and ensured the leather permanence for from five to ten years. Recently, a new oily composition has been created which provides for longer leather permanence and durability. These methods can be used to restore heavily deformed and disintegrated bindings. A method has been also worked out of stabilizing leather directly on a book, without unbinding the latter. Effective methods of cleaning leather bindings have also been recommended for use in restoration practice.

For many years research has been conducted into the restoration of manuscripts on parchment and parchment bindings. Among the most typical damages of the parchment are deformation, brittleness, transparity, staining, sticking together of pages, etc. In each concrete case the use of particular restoration methods is determined by specialists in close cooperation with restorers. The laboratory chemists have worked out methods of softening, straightening, cleaning, and removing of stains from parchment. They also know how to deal with the transparency of manuscripts on parchment with texts on both sides of a page. Using these methods, the restorers have restored manuscripts dating back to the 7th-18th centuries, including the famous Geography of Ptolomeus /I5II/ in which before the restoration all the pages were tightly stuck together.

A methods has also been worked out of doing away with the deformation of parchment bindings without removing the parchment from the cover. This methods guarantees the binding stability of up to two years. As a rule, this type of damage is caused by the

storage of books in parchment bindings in dry rooms: as the parchment is tightly stretched, the binding remains permanently open. If there are many such books on the shelf they, being large in size, oust other books from the shelf which drop to the floor and, as a rule, are damaged.

The laboratory chemists are also engaged in research into the restoration of documents on paper. The following problems are being studied: cleaning from all types of staining; stabilizing texts made in pencil or ink which is not resistant to water; stabilizing worn or brittle paper; neutralizing; separting pages which are stuck together or are damaged as a result of excessive humidity. The year 1987 saw the completion of work on the method of restoration of cemented books on art paper damaged as a result of excessive humidity. The method has been successfully tested in practice. In a modified form it is now employed to restore a manuscript found in a cave in Armenia and which is nothing but a solid "brick".

Together with the Central Research Institute of Paper, the Lenin State Library is engaged in creating restoration paper for filling missing parts of pages. Several kinds of such paper produced in the Institute are used by the LSL restorers.

Biological research

Research into questions connected with the biodamage to library collections is carried out only in the LSL. It consists in the determination of species, study into the dynamics of the quantity and ratio of various insects' species, into the biology of development, behaviour and ecology of the insects. The laboratory scientists also study the damage which can be done by various species of beetles, moths, cockchafers and some other insects. Much attention is paid to the methods of detecting the degree of contamination of documents and storage rooms with insects and to the elaboration of simple methods

of detecting insects which can be used by non-specialists.

Prolonged experience of the biodamage protection of documents has shown that a new approach to the solution of this problem if required. We are aware of the growing danger of contaminating the environment with pest-killers. That is why we concentrate our efforts on the perfection of preventive measures which would ensure the safety of documents at the same time being less costly.

Micological research consists in the identification of the fungi species and the determination of their possible harm to the document material. A group of fungi has been identified which is highly harmful to cellulose. A clear-cut correlation between the storage conditions and the degree of stock contamination has been established. Search is now under way for disinfectants for the restoration size, paper, leather and parchment.

Specialists are well aware that the safety of the stock is functionally dependent on the environmental conditions which can either accelerate the process of natural ageing or, on the contrary, slow it down. Environmental factors are usually considered independently from one another. Up till recently their proper investigation was impeded by the absence of a sufficiently close cooperation between various specialists. Chemists dealt with their own problems while biologists tackled theirs without thoroughly taking into consideration the changes in the physical and chemical structure of the document material which occur with time. Today such an approach to the document conservation problem would be wrong. Only a comprehensive approach to the problem can bring in the best results.

In our view a book depository is a single ecological system within which biological /insects, fungi/ and abiotical factors /temperature, humidity, light, air and degree of its pollution/

constantly interact. To better guarantee the preservation of the stocks one has to be able to forecast the behaviour of this system as a whole in case of a change in some of its components. To be able to do so it is necessary to take into consideration the effect of this or that factor, the sequence of their operation and their dependence on each other. On the basis of such an approach we have engaged in a comprehensive study of the effect of the environment on documents. Among the first results were data on the amount of dust in the air, its composition and distribution along the air stream, on the amount of microorganisms in the air in various storage room zones and on the fungi contamination of bindings made of various materials. We have also managed to establish the interconnection between these two factors.

Mentioned here are only the general trends of the laboratory's research, for it is impossible in such a short article to deal in detail with all the objectives, methods and tasks of our studies. The LSL regularly publishes collections of laboratory's scientific papers which contain the results of our research. The year 1986 witness the 8th edition of this kind. Methodological recommendations and practical instructions on the questions of document conservation are also regularly put out to help restorers and stockholders.

Restoration

The responsibility for the restoration of documents from the LSL stocks /except microfilms, microfiches and tapes/ lies with the department of hydiene and restoration. The department drafts both annual and five-year plans of work. Such simple operations as gluing back separate pages or parts of a book are done by the librarians working in the book depository. There is a rule that a publication with defects cannot be issued to a reader.

More complicated operations are performed by restorers with special training. In their work they make use not only of the methods elaborated at the LSL. The experience of many leading Soviet and foreign laboratories and restoration shops is studied and used.

On getting a document for restoration, the restorer on his own decides what methods and means to use. In most complicated cases he works on the assignment together with other specialists in the laboratory. Sometimes it is necessary to search for new methods and means, especially if the traces of previous restoration are to be removed, the book is to be cleaned of stains of unknown origin or brittle paper and leather are to be consolidated.

The plan and assignment for the restoration of unique documents are to be approved by the restoration council which comprises specialists from the LSL and other institutions. Within the recent years many valuable documents have undergone very complex restoration. Among those are the unique manuscript Tale of Mamayev Battle /late I7th-early I8th centuries/, Prayer Book /I79I/, Service Book /I693/, Book of Canons /I7I5, the only existing copy/, Apostle /I574/, Bible /I540/, archives of Vladimir Korolenko, Nikolai Nekrasov, Alexander Fet, Anton Chekhov, Nikolai Gogol, Vissarion Belinsky, Fyodor Dostoyevsky and other writers, Soviet posters /TASS Windows and ROSTA Windows/, newspapers Iskra and Pravda. Much attention is paid to the restoration of specialized stocks - maps, atlases and music.

The documents for restoration are selected by stock-holders who are guided in their decision by the documents' physical state, value and the frequency of usage.

In I985 the library adopted a ten-year programme providing for the preservation of the stocks. The programme envisages more vigorous efforts in the fields mentioned above. It is based on the proposals

of stock-holding departments. One of the main tasks is the creation of a bank of data on the state and prospects for the stock development, on the required hygienic measures and technical equipment. These data would serve as a basis for the main project of the library reconstruction.

After the reconstruction of the library is completed, a centre of conservation and restoration of library collections will be created which will conduct both theoretical and applied research and engaged in restoring documents for the LSL and other libraries. In view of the expected growing volume of restoration work, the centre should be provided with all the necessary technology. To make this possible we should continue our work of generalizing both home and foreign experience as fully as possible. Moreover, we would like not simply to copy the best models, but to create our own on the basis of local conditions and tasks.

It should also be stressed that it is possible to guarantee the safety of the LSL stocks only if all the library staff, and not only the employees of those departments which bear the direct responsibility for this, take part in these efforts. That is why it is necessary constantly to raise the knowledge of the librarians in this sphere and stimulate their interest in the preservation of the unique stock of the country's main library.

Preservation of Book Collections in Regional Libraries
by

Z.P. Dvoriashina
Laboratory Chief, Lenin State Library of the USSR

General Session IVB
Regional and State Conservation Centers
Friday, 8 July 1988
9:00—10:30

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PRESERVATION OF BOOK COLLECTIONS IN REGIONAL LIBRARIES

by Z.P. DVORIASHINA, laboratory chief of the Lenin State Library

Preservation of Book Collections in Regional Libraries

by Z.P. DVORLaSHINa

Regional Libraries

Each Union Republic has a state library /SL/ which is a universal central regional library and republican repository of national publications, manuscripts and other documents. Similar functions are performed by centralized library systems /CLS/ which are central regional libraries of the next level. Both SLs and CLSs are basic links in the country's single library stock. Their collections /from three to six million volumes/ are on a par with the largest libraries of the world. As of the beginning of 1986 there were 64 million volumes in the SL stocks.

Besides the network of libraries under the Ministry of Culture the republics have academic, university and universal scientific libraries, the latter specializing in technology, agriculture and medicine. All these libraries, as well as the libraries of the Union and Autonomous Republics, territories and regions which cater for respective regions, have stocks intended for permanent or long-term storage. That is why one of their major tasks, alongside the storage of the stocks and providing services to the readers, is the preservation of documents.

Organization

There are several ways contributing to the preservation of the library stocks: the availability of the necessary number of copies on the country's scale and the respective system of accounting; reliable control over the use of documents; organization of specialized stocks; a set of measures united by the notion "conservation of documents".

To ensure the completeness of the national stock a document entitled "Single Rules for Acquiring Soviet Publications for the Lsi

State Public Libraries and SLs of the Union Republics" has been worked out. The purpose of this document is to ensure the preservation of a single library stock through the combined stocks of a single network of the cooperating libraries under the USSR Ministry of Culture.

Preservation of Specialized Stocks

Practically all the regional libraries have rich collections of manuscripts, incunabula and rare books. In Georgia, Armenia, Azerbaijan and Uzbekistan manuscripts are singled out into specialized stocks and are kept in the Institutes of Manuscripts under the auspicies of the Academies of Sciences of Union Republics.

At the present time all state libraries, as well as territorial and regional libraries, have sections which cater for the stocks of especially rare and precious publications and manuscripts. The state libraries of Latvia, Estonia, Moldavia, Kazakhstan, Tajikistan and Turkmenia have departments of rare books and manuscripts. The state libraries of Byelorussia, Georgia, Lithuania, Uzbekistan and the Ukraine have rare books departments. The state library of Armenia has a department of incunabula and rare and archive literature, that of Azerbaijan - a section of rare books and manuscripts, and that of Kirghizia - a section of rare and especially valuable books. Each of such stocks is unique in its own way and should be carefully preserved. The recent years witness growing attention to the preservation of the regional libraries' stocks at a lower level as well. The system of stock-taking is being improved in all the libraries. Some of the state libraries have drawn plans of measures to eliminate drawbacks in the practice of stocks' preservation.

Special attention of the librarians is increasingly drawn to the newspaper stocks for these publications are printed on paper

of comparatively low quality. An interdepartmental study into the principles and conditions of ensuring the preservation of the newspaper stocks in the country's largest libraries has been conducted on a national scale. Especially active part in this research was played by the state libraries of Kazakhstan and Estonia. Among the most aparent drawbacks were the imperfect system of stock-taking and the absence of the necessary conditions for the storages of the newspaper stocks.

State libraries of Union Republics took part in the all-Union scientific and methodological conference which discussed the problems of stock-taking and preservation of the newspaper stocks. On the basis of the conference materials the following methodological recommendations have been prepared: "Preservation of the Newspaper Stocks" and "Microfilming as a Method of Preserving the Newspaper Stocks". It was planned, in the nearest future, to create regional stand-by stocks of newspaper microcopies.

To preserve the book stocks in foreign languages, the LSL and the All-Union State Library of Foreign Literature have worked out recommendations on stock-taking and accounting for universal scientific libraries, as far as the work with foreign literature is concerned.

Storage Conditions

In some libraries, because of the lack of sufficient floor space and violations in the temperature and humidity conditions, storage conditions are inadequate. In the state libraries of Georgia, Latvia and Estonia some rooms are not fit for storage and much effort on the part of the librarians is required to ensure the preservation of the stocks.

In recent years a growing attention is paid to the problems of the libraries. The scale of construction work is growing, work

is under way to improve the storage conditions on the libraries' premises. A new building of the state library of Turkmenia has been erected (in Ashkhabad) which has won the State Prize as the best one in the country. The stocks of the Tartu State University scientific library and of the Azerbaijanian manuscripts stock have been moved to new buildings. The state library of Latvia has received money for the construction of a new building.

The storage conditions in Matenadaran, the depository of Armenian ancient manuscripts, are optimal.

Stock Restoration

To preserve the stocks it is very important to timely conduct the restoration work, which today is acquiring a growing significance in the country. Departments and sections of hygiene and restoration are being reestablished, restoration groups are being extended and are acquiring a new status of a section or a department. For instance, in the period from 1983 to 1986 restoration departments or sections have been set up in the state libraries of Moldavia, the Ukraine and Kazakhstan. In the state libraries of five republics - Armenia, Georgia, Byelorussia, Lithuania and Estonia - restoration departments have been functioning for several decades.

The hygiene and restoration departments and sections are responsible for the restoration and the hygienic cleaning of the stocks, and, if necessary, for disinfection. Especially close attention is paid to the restoration of rare and valuable books. Employees of some state libraries /Kazakhstan, Lithuania, Estonia, Tajikistan/ also restore manuscripts.

The range of restoration operations is wide. It is printed matter and manuscripts on paper which are subject to restoration in the libraries. The restorers have mastered all the methods of restoration, stabilization and cleaning of the document paper.

The employees of the state libraries of Estonia, Lithuania, Armenia, Latvia and Byelorussia can perform restoration work on, and softening of, leather bindings of ancient books and manuscripts The state library in Estonia began mastering a new process - the conservation of the paper bindings of rare books. To meet the requirements in binding operations, some of the libraries avail themselves of the services of binding shops in their home towns. For instance, on a contractual basis the binding shops of Alma Ata bound 93,000 books and manuscripts for the state library of Kazakhstan in 1986 al one.

It should be pointed out that the restorers of the Baltic Union Republics have the best theoretical training and are capable of performing the most complicated restoration operations. Besides their practical work, they also engage in research the findings of which are later introduced into the practice of the whole network of the republic's libraries. The employees of the Latvian state library have carried research into the state of damaged publications within the stock of rare and especially valuable books. The Estonian state library has concluded a research into the use of organosilicon compounds for the conservation of leather and parchment bindings. They conduct this research either independently or in cooperation with other research institutions. The Soviet Baltic region has the most extensive network of libraries and other institutions which perform practical and research work on document restoration:

Estonia - Republican library
Tartu State University scientific library
Literary Museum named after F.R. Kreitswald
State Artistic Institute
State Artistic Museum of Estonia

Lithuania - Republican library

Scientific library of the Vilnius State University

Library of the Lithuania's Academy of Sciences

Restoration centre of the P. Gudinas Artistic Museum of the Lithuanian SSR

Latvia - Republican library

Library of the Academy of Sciences of the Latvian SSR

The number of employees on staff of the departments and sections of restoration in the state libraries varies greatly: 24 people in Armenia; 20 - in Estonia; from 8 to 12 in Byelorussia, Georgia, Kazekhstan and Lithuania. In the rest of the state libraries - from two to five people. Such a difference is caused not so much by the number of books on stock which are in need of restoration as by the date of the organization of the department in question.

The number of restorers on staff of libraries and other institutions also varies greatly - from one to 35 people.

The existing system of training restorers fails to comply with the increasing volume of restoration work. Today librarians with general theoretical education who want to specialize in the restoration of book stocks have to undergo the following training: learning from experienced restorers and on-job training. The ABCs of the restoration work are taught to each person individually. That is why the number of highly-skilled restorers is still rather small and as a rule only large libraries have them on staff.

The workers for the departments and sections of cleaning and restoration of the state libraries are trained in the Lenin State Library. State libraries which serve as methodological centres in the matters of stock preservation for territorial and regional librari train restoration specialists for the latter.

Once every five years restorers of republican, territorial and regional libraries improve their skills in accordnace with a special one-month programme at the Institute for raising skills of workers of cultural institutions organized under the USSR Ministry of Culture. There lectures on theoretical subjects are delivered by research workers of the LSL while highly-skilled restorers teach the most up-to-date restoration methods to the students.

The student-restorers are trained in the newly-discovered methods which have been tested in the leading restoration organizations and recommended for application on a wide scale. The tasks of the Institute include not only raising the restorers' skills and learning by them of new methods and means of restoration and conservation, but also checking on their training. After a month at the Institute the restorers have to pass a theoretical exam and present their practical works for evaluation.

To control the quality of work, the restorers are subject to the certification procedure. Under the aegis of the USSR Ministry of Culture, the Commission of the Department of the Fine Arts and the Protection of Monuments has been created which gives restorers a qualification rating depending on his or her theoretical training and the complexity of work he or she is capable of performing. The Commission issues certificates which specifies the profession, the qualification rating and the date until the certificate is valid. A restorer is subject to certification every five years.

The role of the certification which is practised only in the Soviet Union cannot be overestimated. It means not only recognition of the restorer's right for independent work. It is also a guarantee of the document preservation and the high quality of restoration work.

The existing system of training restorers is suffice to meet the requirements in highly-skilled specialists of large restoration centres and restoration departments of the republican libraries and the country's museums. However, the need in the restoration of library stocks is constantly growing /one of the reasons being the insufficient durability of modern paper/. That is why it is planned to extend the system of training restorers with the help of higher and specialized secondary education establishments.

The raising of restorers' skills is promoted by means of conducting all-Union scientific-practical seminars on the urgent problems of library stocks' preservation which have been organized by the Lenin State Library. The participants in the seminars were acquainted with the results of the latest research into the problems of document conservation, carried out not only in different libraries but also in the Main Archive institutions and country's museums. As a rule, these seminars facilitated the exchange of experience in practical work.

Jointly with the state libraries the LSL organize regional seminars accompanied by practical training. In 1982 a zonal seminar was organized in Baku which was attended by the restorers of the libraries and the Institutes of Manuscripts of Azerbaijan, Georgia and Armenia; earlier a seminar was conducted for the libraries of the Central Asian Republics and Kazakhstan. Scientific-practical seminars were held in Tallinn, Tartu and the Arkhangelskoye Museum-Estate near Moscow, the participants of which not only discussed theoretical questions but demonstrated the methods of restoration of bindings and books. It is worth mentioning that regional seminars attract not only library restorers, but also restorers on staff of memorial and literary museums and institutes of manuscripts, as well as people responsible for the storage of stocks.

As mentioned above, especially active in the field of restoration are the libraries in the Soviet Baltic Republics. It has become a tradition there to hold seminars for the libraries of their region. The scientific library of the Tartu State University is regularly conducting scientific-practical seminars of Estonian restorers in summer time. In May 1988, the Lithuanian state library is going to conduct a seminar for the republic's restorers in which specialists from other republics will also take part.

The efforts of the state libraries in the field of stock preservation are increasingly effective; quite often they are on a par with the Lenin State Library and other libraries of the all-Union importance. That is why it is planned not only to organize methodological assistance to the state libraries on the part of the LSL, but also to promote cooperation of the latter with the state libraries.

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Microforms as a Means to Preserve Soviet Library Funds

by

Iuliia Petrovna Niuksha
Head, Document Conservation Department, Saltykov–Shchedrin State Public Library

General Session IVC
Microforms and Brittle Books
Friday, 8 July 1988
10:45—12:00

Second Soviet-American Seminar, "Library Technology as a Means of Providing Access to Library Resources"

MICROFORMS AS A MEANS TO PRESERVE SOVIET LIBRARY FUNDS

Y.P. Niuksha,
department head,
Saltykov-Shchedrin State Public Library

Moscow, 1988

1. Generalia

Much has been said of late about the fragility of paper. Every country has period in its history when it committed its intellectual treasures to paper alone, a short-lived medium, if it contained woodpulp, rosin and badly processed cellulose. The Library of Congress was the first to take notice; as a result, it is most often cited as an example when we refer to bad state of books in depositories. But every library which has a depository of its own has large quantities of paper retaining only 10 to 20 percent of initial durability. Hence the methods of mass deacidification, which preoccupy chemists and librarians alike. It is an involved process, difficult to practise for financial reasons and the specifics of library routine. I hope to say a few words about it later. Now, I should like to stress the grand scale of the work ahead. The State Saltykov-Shchedrin Public Library has over 28 million book copies, the State Lenin Library, close on 40 million. The Russian Federation libraries possess a total exceeding a billion copies--a huge quantity hard to put in order, even according to strictly set schedule. It is hardly possible to make all those books usable in the foreseeable future, so librarians pay constant attention to indirect forms of document preservation. In this aspect, I should like to dwell on microforms, prominent in the patterns of gradual protection of documents from ageing and damage.

2. Early Attempts of Miniaturization

Conservation proper means protection of a printed book or manuscript by restoration and stabilization in their conventional forms, and by putting documents in protective

cases and capsules. Indirect forms of protection are meant to salvage information, not the documents which carry it, despite their cultural-historical import. Every library is in a sense a book museum, which differs it from information centers. All libraries also have indirect protection programs, purposefully drawn or empirically arisen from library practice. Prominent in such programs, microforms are very helpful when original editions, printed and manuscript, must be kept from damage and ageing. Most attention is paid to newspapers, the least durable documents, which need urgent protection from rapid ageing and transfer of the information they carry to other media.

The experience of the Saltykov-Shchedrin Library, which once practised reprinting of newspapers for constant storage in miniaturized quality editions, might be of interest. As a circulation was being put out, another edition was printed simultaneously on lasting paper: 4, 8, or 16 times smaller. Relatively cheap, the practice, however, produced complications in printing offices. Its pluses are clear to all, nevertheless: book-size newspapers are convenient in storage and handling. The practice has long-term prospects, as conventional papers may well be used the first ten to twenty years. When time destroys them, we shall have miniature copies with headings readable with the naked eye, and texts with conventional magnifying lenses or in magnified copies to be made for the occasion. Regrettably, the idea was never widely disseminated due to the competing film information carriers, and because microphotocopying largely added to librarians' heavy duties. Besides, film carriers have major advantages in

disseminating information and with the prospects of automated library services. Anyway, microforms are now widely used by offices and information services.

3. Microforms in Libraries and Scientific and Technical Information Services

Many libraries have their own treatment of the issue. The Lenin, Saltykov-Shchedrin and Scientific and Technical Public libraries are equipped for microcopying and using microforms. Originals are usually copied once. The most valuable editions are microcopied to ensure their preservation, with one negative photocopy also kept in the stand-by fund. One positive halogen silver and at least two diazotype copies are made from each negative. One or more diazocopies are used by readers and for paper copies. Two reserve copies serve to restore such working copies if lost or destroyed. Working copies are enough to satisfy public demands. Reserve copies are stored at the depository, and working ones at the department where the original is stored, and in the reading room. Diazocopies are available in the microcopy reading room, and at the departments responsible for complete-set Soviet periodicals, information and bibliography, dissertations, newspapers, manuscripts and rarities.

National and republican scientific and technical information institutes think it most expedient to microfiche foreign journals and books in several volumes, symposium and conference proceedings, patent, method-setting and normative technical documents, industrial catalogues, unpublished translations, dissertations, programs, etc. They regularly put out microfiche information bulletins.

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4. Microforms for Contacts Between Libraries and Nations

Microforms are especially convenient for interlibrary contacts. Much facilitating them, such carriers allow to store the originals intact unless they are damaged in transportation, to say nothing of mail expenses. Clients at home and abroad are served by subscription made at information centers, by interlibrary and international subscription, and on orders via microphotocopy departments.

The Natural Science Library alone serves close on 250 libraries of Soviet academic institutions. That centralized service is included in the network of national and international microfiche systems. It helps to widely introduce microfiches in information and library services for scientists and other specialists in the USSR Academy of Sciences network. Microfiches are equal in status to printed editions as original information sources. By allowing selective copying, microforms open new prospects for the use of funds and scientific information exchange.

International cooperation is expanding. The All-Union Institute of Scientific and Technical Information, for instance, cooperates with information services in the Soviet Union, Bulgaria, the GDR and Poland to microfiche 2,000 journals a year, and mail over 300,000 copies to readers of the basic publications processed. The Institute hands out close on 30 million microcopies a year. Most republican scientific and technical information centers are oriented on the use of copies from already copied original information sources. The Saltykov-Shchedrin Library replenishes its

manuscript fund thanks to microfiche exchange. Reviews of manuscript microfiches received from foreign depositories come out regularly.

5. Some Advantages of Microforms

Microforms are meant to fuller satisfy the public demand by making library funds more accessible, reduce the number of unfulfilled orders, fill in the gaps in funds, ease staffs' duties, make materials in store more compact, and ensure the safety of collections and individual editions. I think it expedient here to single out some general features and praiseworthy innovations in certain offices' work with microforms.

5.1. More Compact Information

All libraries, archives and scientific and technical information centers have to make their depositories as compact as possible. Beside financial benefits in exploiting their premises, small depositories are more convenient in maintaining optimum storage conditions and slowing down the wear of material information carriers. A small and compact depository can be brought as close as possible to reading rooms, which facilitates librarians' work.

5.2. Depository Storage

Depository funds may be transferred to microforms fully or partly. Depository storage requires quality negatives with halogen silver layers. Microfiche storage requires the temperature of 12 degrees centigrade. The expenses are usually covered in seven or eight years due to cheaper housing maintenance.

5.3. Fund Expansion and Storage of Valuable Documents

Many foreign information sources exist only as microfiches and have no paper analogues. Microfiche reproduction ensures constant fund replenishment, increases the number of copies, and improves the conditions of using documents. Microfiches allow to easily fill in gaps in complete sets of periodicals. Soviet libraries have many rarities and other valuable editions. Microfiche exchange makes them available. It also allows to enlarge funds with rarities printed on low-quality paper, including unwieldy newspaper files and maps.

The Saltykov-Shchedrin Library largely uses microfiches in its manuscript fund to remove originals from circulation. Medieval manuscripts from monastery libraries are the first to be microfiched, among them the world-renowned library of the St. Cyril Belozersk Monastery, with its gems of medieval Russian literature. Studies of that collection started in the early 19th century to steadily gain momentum. The books are badly preserved, and readers' access to them is limited. At present, we supply them only with microfiches. The Anna Akhmatova fund is in a similar situation, especially pencilled manuscripts. Original Greek manuscripts are also non-available. Microcopies make all those rarities accessible to many experts outside Leningrad, as microcopy funds of all Soviet libraries have the status of parts of the national library fund.

5.4. Emergency Funds

Microfiches are much safer and more convenient in storage, with a valuable collection taking up one strongbox.. Unlike such depositories, most libraries have large book depositories manned by all sorts of people, so the danger of theft or destruction is much greater.

That was why stand-by emergency funds were set up to include the most valuable documents, genuine national heritage.

5.5. Catalogues

Microphotocopied catalogues allow to include reference materials in emergency funds, and supply provincial libraries with them. A microfiche holds as many as 1,600 items, especially if the material is arranged vertically. Doubles are made from microfiches by direct magnifying or diminution. They are specially convenient for indexes with indications of libraries owning particular editions. Intermediate carriers, in fact, microcopies are nevertheless considered documents of full value. Quality microforms never demand more time for search than conventional catalogues. Information is regularly put out about microfiches. For instance, the State Public Scientific and Technical Library regularly releases "Natural Sciences. Technology", a catalogue of operative signal information appearing in periodicals abroad.

6. Standards

There are many legal issues pertaining to microforms. The Soviet Union has Standard (GOST) No. 13.002-79, "Microfilms Enjoying the Status of Originals". So microcopies can be also used in legal practice, where they enjoy the status of material evidence due to great dependability of information

preeservation as compared to paper documents. Microfilms are much safer and dependable than paper information carriers, provided they have the right form and the original source and the date and place of copying are precisely specified.

A microform practically rules out forgery. Even 20-fold diminution makes it impossible and unprecedented. At any rate, any change in a microcopied text or picture is visible immediately, while paper documents require expertly studies. Thus, microforms provide much better preservation of information than paper carriers.

Microphotocopying is specially welcome with archive manuscripts. A manuscript passes through the hands of numerous librarians, readers and restorers, and is repeatedly exhibited. All that cannot but damage it, as proved by comparisons of repeated microphotocopies. Many manuscripts are read repeatedly and for a long time, sometimes suffering intentional or unintentional damages, to say nothing of natural wear. Clearly discernible in microcopies, we can take stock of those damages. At the same time, microcarriers are almost 100 percent thief-proof. Their texts cannot be damaged unless they are fully destroyed.

6.1. Restoration Work: Documentation

Photodocumentation of restoration works is a closely related task. Microcopying also enhances its efficiency, and can be easily stored with the manuscript under restoration and stabilization. Microphotographs provide good enough resolution, and the manuscript looks authentic. Experts largely benefit by such evidence of manuscript condition.

7. Microform Storage

Film-based, microforms require special care in storage, and different conditions. The minimum humidity is 15 percent for cellulose-based films, and 30 percent for polyether-based, no higher than 40 percent. 60 percent is the highest limit. Nevertheless, usual, 55 percent humidity is also acceptable. Film-based microforms in constant storage require a temperature no higher than 12 degrees centigrade, and those in long storage no higher than 15. Color microforms are even more demanding. Without uninterrupted gauging, humidity and temperature in depositories must be registered at least once every 24 hours, with one gauge present for every 25 sq m of floor space. Negatives do not tolerate any deviations from storage standards. Public funds, especially in reading rooms, have conditions different from those in depositories, and so require conditioning, which slows down library service. The mere transfer of microcopies from room to room with different air characteristics and their reading increases their wear.

Microfiches, namely, emergency negatives, halogen silver positives and diazocopies, require different protective conditions. Diazocopies are less durable than halogen silver copies, though they may serve from ten to a hundred years. Diazofilms suffer most in reading. They cannot be used for constant storage and so are temporary documents. No special conditions for their storage have been specified as yet. Many are stored in conventional reading rooms. Tests also have different frequencies: no less than five or six years with halogen silver films, and no less than three with diazocopies. Standard (GOST) No. 13.401-74 specifies storage and supervision conditions for depositories.

8. Opinion of Microforms

Some do not accept the very idea of non-paper information carriers, others are excessively enthusiastic about them.

Of course, conventional reading is better for the eyes than from projectors. Librarians have to overcome psychological barriers when going over from paper to microcopies, and so have readers. An interesting study of the use of microforms in scientific and technical libraries carried out through interviews and questionnaires in Soviet Kazakhstan showed that librarians put up with the transition to microforms, and realized their convenience. Readers, on the other hand, laid stress on their drawbacks. But both understood that future belongs to microforms as part and parcel of scientific progress in information and libraries. In an opinion poll among librarians on the supposed future of microforms, 70 percent thought that microphotocopies and transfer of information to other carriers had the best prospects. Only 18 percent thought mass stabilization of library funds the most promising way. Most thought that microforms would retain their prominence not to be ousted by videodisks for the rest of this century.

Microforms and other non-paper carriers make information fuller and more accessible. They efficiently help to preserve traditional editions.

Зак. № 1866/973 - 7

Document Stabilization in Libraries
by

Iuliia Petrovna Niuksha
Head, Document Conservation Department, Saltykov-Shchedrin State Public Library

General Session IVD
Mass Deacidification Program
Friday, 8 July 1988
13:30—14:30

Second Soviet-American Seminar, "Library Technology as a Means of Providing Access to Library Resources"

DOCUMENT STABILIZATION IN LIBRARIES

Y.P. Niuksha,
department head,
Saltykov-Shchedrin State Public Library

Moscow, 1988

Y. P. Niuksha

DOCUMENT STABILIZATION IN LIBRARIES

The present stage of library work is characterized by close attention to document preservation, and conservation as its most important part.

The document conservation department of the State Saltykov-Shchedrin Public Library constantly tackles research and practical tasks to preserve documents through storage, stabilization and restoration. The work proceeds along the following lines: theoretical, technical, technological and library.

TERMS

From among the theoretical scientific problems, we pay special attention to the accuracy of terms, definitions and formulas. The terms and definitions used the world over are not unified in the sphere under consideration. Conservation was critically revised and fully standardized in the Soviet Union these last years: a point worth mentioning because the entire system of conservation, including terms, definitions, numerous parameters, tolerance, and quality indices were discussed by experts countrywide, and with some foreign experts when they worked at the document conservation department of the Saltykov-Shchedrin Library. The norms thus elaborated are somewhat different from those accepted by individual offices and even countries.

The term DOCUMENT is adopted as the pivotal. The USSR State Standard (GOST) No. 16487-83 thus defines the term: "a material object containing information preserved by a man-made

method to pass it on in time and space." On the basis of that definition, we qualify all publications and manuscripts preserved in library funds as documents. That all-embracing term concerns all written, printed and graphic works on any materials.

Of the three components of conservation, we single out stabilization as the most promising and rapidly developing.

Translated from the Latin, the word STABILIZATION means making something stable, firm or steadfast. Stabilization is meant to prevent or stop chemical and biological processes and mechanical influences destroying documents or quickening their destruction.

Stabilization stands out in the wide range of conservation problems and differs from restoration, by which we mean the restoration of the outlook, shape, color and durability of a document. More often than not, the results of stabilization are invisible to the eye and do not bring back the original look of a document. So stabilization began to develop later than other kinds of conservation, as its theoretical bases took shape. Now, stabilization is a broad concept uniting the three basic spheres of its application and operating fairly diversified methods.

All specific factors of material injury are conventionally divided into three categories.

DESTRUCTION

Mechanical injuries are due to readers and librarians violating the conditions of the use of documents, including exhibitions, transportation and suchlike. The failure to observe the accepted rules causes the wear and tear of documents.

PHYSICO-CHEMICAL INFLUENCES are largely determined by the environment: air pollution, lighting, and the work of the equipment which provides indoor storage conditions. The optimim conditions, including purified air and the 4 degrees centigrade temperature, slow down the natural wear of documents many times. In conventional environment, the natural wear is much quicker and stronger to the degree to which it differs from the accepted standards. The large volume of documents on paper, which quickly deteriorates, has brought the situation to a critical point. Experts are concerned about the preservation of universal intellectual treasures and make many efforts to find ways of rapid document processing. But the grandiose and difficult task makes them regard another possibility, that of information transfer to other repositories. Micro-repositories are of doubtless interest to libraries, both because they are economical and open broad vistas of library development in the sphere of scientific and technological information. That makes all the more acute the question of bibliophiles concerning the classical concept of books and libraries.

BIOLOGICAL INFLUENCES are fairly tolerable in conventional storage. But even minor violations of its conditions and, even more so, calamities like fires, floods, earthquakes and suchlike, which injure premises and

communications, lead to rapid destruction deteriorating natural wear and tear. Biological destructive factors, mainly fungi, closely follow physico-chemical ones to cause rapid biochemical destruction of books and epidemic dangers. Biological injuries are the most difficult to cure and bring the most dangerous results, even though they arise only occasionally.

BASIC STABILIZATION PRINCIPLES

In this connection, the only reasonable way to stabilize documents demands processing to protect documents from all three destructive groups of factors or at least to inhibit their influence. It is a complicated scientific task, because its techniques have to meet all the three goals of document stabilization: durability, biological resistance and wear resistance. The task requires profound studies of chemical and biological material injuries, the elaboration of methods by which to gauge the condition of documents and the degree to which their original qualities have changed. That is possible only with injury diagnostics and the criteria of substance and material condition sophisticated enough. We proceed from the following premise. Stabilization is a process by which a physico-chemical system is made steadfast, which ensures constant and unchangeable characteristics of documents, and their resistance against unfavorable influences. Stabilization slows down their wear and prevents destruction. That requires the use of conserving preparations meant for a certain term. Hence the necessity of durability forecasts for stabilized documents as compared with the original, unstabilized ones.

LATTER-DATE METHODS OF DURABILITY EVALUATION are chiefly based on the determination of activation power. These are done on model samples with maximum approximation to the composition and state of the document in question. The activation power of a durable document has been established at 145-150 kJ/mole.

DOCUMENT STABILIZATION AGAINST BIOLOGICAL INFLUENCES is a multifold task and has several spheres of application. It is based on the use of physical, chemical and biochemical factors.

Biocidal procession works well because it lasts long and thus provides a reserve of biological resistance. But that forte becomes a major vice if documents are soon to be handed by people. Here, physical procession, e.g., by high-frequency electric fields, is welcome. We use high-frequency currents to desinfect and dry books. Here, the moisture content equilibrium is brought down within the limits tolerable for polymeres which the document contains: a welcome process prolonging the life of the document. But certain kinds of desinfection, while stopping active biological influences, do nothing to remove the products of destruction, and extra measures are necessary. Enzyme treatment is an effective way, with the remnants of binders removed, and fungus mycelium and biosynthetic products partly destroyed. Dosed use of complex enzyme systems improves cellulose by changing its degraded portions into a soluble state and thus enhancing the polymerization of the entire cellulose basis of the document.

Our BARRIER PROTECTION method deserves notice, too, with documents brought in touch with biologically active fibrous materials to protect them from destruction. Polyacrylonitryle

fibres modified by quaternary ammonic compositions lent good results. The most radical techniques are based on the reduction of paper moisture capacity to keep specific moisture equilibrium within 10 percent limits.

STABILIZATION AGAINST PHYSICO-CHEMICAL INFLUENCES now has many methods at its disposal, mainly impregnation or other procession with alkaline salt and buffer solutions. Wood alcohol solution of barium hydroxide, followed by various water solutions, has been long used, e.g., in the Barrow method and in many buffer mixtures. More recent are semi-mechanized stabilization methods. One, a GDR invention, unites stabilization and mechanical strengthening of paper sheets from within through splitting into one consecutive process: a method especially successful with paper several centuries old.

PRODUCTION LINE METHODS AND PIONEER TECHNIQUES

The Saltykov-Shchedrin Library also uses semi-mechanized techniques with elements of stabilization. It has a production line to refill damaged paper sheets with pulp: a technique stabilizing the paper against all three destructive factors. Sheets are spread, filled, pressed and dried, operations following one another, on a conveyor net moving uninterruptedly. The filling includes cotton fibre with polyvinyl-alcohol fibres, chalk, magnesium and some other admixtures. The use of chelate compounds and biocide polymeres is among the most promising latest finds.

The new techniques demand metals, which speed up paper wear, to be removed from paper with complexones and metal complexonates, which bind heavy metal ions and block their

oxidating influence on cellulose. Complexones bind copper ions C 2+ and iron Fe 3+ in pulp under 60 degrees centigrade and pH=6.0. As water is pumped out of the mould, the refilled paper is washed. Two complexone acids are used: oxyethylindenedimethylphosphonic and diethylenetriaminopentacetic. Stabilization is most successful with complexones combined with calcium and magnesium bicarbonates Ca 2+ and M 2+. Intrafibrous links with calcium and magnesium cathions present were detected by the nuclear-magnetic resonance method. The calculation of shear modulus, a vital characteristic of links changed between and inside paper fibres, shows the formation of extra joints in and between fibres, which inhibits destructive processes.

Another technique is based on the use of tributhylolmetacrylate-containing co-polymeres, which enhance biological resistance and durability of documents, with refilling followed by drying at 75 degrees centigrade. The process strengthens interfibrous links, especially after calendering.

The pulp refilling-cum-stabilization method is something in between individual processing in manual restoration and mass chamber stabilization. Stabilization has been made part of restoration, and follows its patterns. Here, to treat every sheet is especially important, i.e., the book stabilized is unbound and rebound again after the work is finished.

Thus, we have a set of fruitful methods for individual and group procession of sheets to achieve long-term stabilization of documents. Mass procession presents much more problems.

MASS PROCESSION

Mass stabilization methods fall at present into chemical stabilization with and without solidifying documents. The former are naturally more preferable. Stabilization which does not solidify documents requires vacuum chambers. Its one method uses magnesium metoxymethylcarbonate in its liquid phase with freon-methanol mixtures; another, in the gaseous phase, uses diethylzinc.

The other group of methods chemically strengthens documents. There are major differences between those methods. One requires impregnation with limewater and water solutions of low-molecular methylcellulose, after which paper is dried by sublimation at 40 degrees centigrade. The method requires bindings removed, with the books later rebound. Binding also suffer when paper is impregnated with a mixture of methylmetacrylate, ethylacrylate and dimethylaminethylmetacrylate and solidified by gamma-rays. The method presents another danger, as aminocompounds often cause paper to yellow.

Thus, every one of the known mass stabilization processes has its pros and cons. The latter are easily avoided with individual treatment. With mass stabilization on conveyor lines, the drawbacks come into the foreground. Hence the need of especially careful work at the chemistry, technology and techniques of the process.

RELIABILITY CRITERIA

Mass stabilization processes have to be largely improved to provide the following mechanical, physico-chemical and biological characteristics of documents processed. The basic

characteristics are: breaking strength, 300 to 500 double bends; rupture strength, 1 H; rigidity, 11-11.5·10^{-6} H/sq m; alkaline reserve, pH=6.5-8; residual strength after wear at 100 degrees centigrade in 24 days, 65%; guaranteed durability with natural wear, 200 to 500 years; absolute moisture with H approaching 100%, no greater than 10%; breaking strength at Standard No. 9.801-82 tests, no less than 70%. Researchers work to simplify processing, do without sophisticated techniques, like sublimation drying, and make the processes cheaper.

Basic criteria of the optimum technique being elaborated include:

complete safety of all book materials;

no danger of environment pollution;

safety of workers during procession and in later use of documents;

universal applicability to bound and unbound documents comprising the library fund, or at least most of them, with precise delineation of applicability.

LIBRARY PROBLEMS

The theoretical work is only part of the task. There are technical and technological problems tied in with those concerning library routine. The latter fall into two parts, at least: preservation of the great stocks of paper documents in store--a difficult task, since paper is very vulnerable; and dependable stabilization of documents through restoration. The library practice requires both preservation and improvement of the original quality of documents in keeping with their functions and conditions of their use.

The optimum process includes restoration and stabilization in one. Stabilization techniques require comparatively simple equipment usable in libraries. Simplicity matters all the more since ever more problems, economic among them, face us in mass stabilization.

Expensive and labor-consuming, mass stabilization breaks the library routine into the bargain. A stabilization program requires special services, librarians assuming extra duties. Document stabilization becomes an independent sphere within a library and strongly influences its work.

CONCLUSION

On the whole, the current stage of the effort is characterized by search for all-purpose stabilization methods, their scientific and practical analyses, and theoretical generalizations. Experts are doing much here. The task is likely to be solved if we attract to it major chemists, in particular, experts on polymeric synthesis, toxicologists, and specialists in biological destruction and in forecasts of paper durability. Our cooperation with Soviet academic and industrial research institutes and critical appraisals of Soviet and our foreign colleagues' joint achievements promise every success to librarians, and museum and archive workers.

Search for mass stabilization methods by trial and error goes hand-in-hand with further R&D on the existing conveyor stabilization methods, which have proved their practical worth and have many prospects for further improvement.

Зак. № 1862/974-7

The Automatized Preparation of State Bibliography (To the question of the Bibliographic Information Exchange) by

Yu. V. Torsuyev
Director-General, Research-and-Production Association
The All-Union Book Chamber

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General Session II
Databases: Issues in the Bibliographic Control of Information in a Computer Environment
Tuesday, 5 July 1988
15:45—17:00

USSR - USA seminar "Library Technology and Preservation as a Means of Providing Access to the Library Resources"

5-8 of July 1988

THE AUTOMATIZED PREPARATION OF STATE BIBLIOGRAPHY (TO THE QUESTION OF THE BIBLIOGRAPHIC INFORMATION EXCHANGE)

Torsuyev Yu.V., Cand. Sc. (Philosophy), Director-General, Research-and-Production Association "Vsesoyusnaya Kniznaya Palata" (The All-Union Book Chamber)

Washington, D.C., 1988

The USSR - USA Seminar: Library Technology and Preservation as a Means of Providing Access to the Library Resources.

Torsuyev Yu.V.,
USSR, Research-and-Production Association "Vsesoyusnaya Kniznaya Palata"

THE AUTOMATIZED PREPARATION OF STATE BIBLIOGRAPHY

The state (or national) bibliography (as regards our country the bibliography is multinational) is one of the main functions of the system of unique institutions - Book chambers. The leading institution in this system is the All-Union Book Chamber created in 1917. Each Union republic has its own Book chamber conducting the work on creating the republican state (or national) bibliography.

The USSR state bibliography has covered a complicated and fruitful way of development.

The whole complex of the state bibliographic indices is the system of the top-level intended to meet the information requirements of the society in general.

At present the All-Union Book Chamber has become the basis for the formation of the Research-and-Production Association "Vsesoyusnaya Kniznaya Palata" (The All-Union Book Chamber) which includes the State Bibliography Centre, the Book Institute, the Book Publishing Management Centre of the USSR, the publishing and printing complex.

The association "The All-Union Book Chamber" is a research and methodic centre of the country in the field of state bibliography, centralized cataloging, press statistics, standardisation of the information and bibliographic documentation, book science, sociology of the book and reading, book-publishing control. It is also the centre of creating and publishing the state bibliographic and statistic information in the form of indices, printed catalogue cards and collections of statistic data on the press.

In the process of preparing the state bibliographic information the All-Union Book Chamber is closely connected with other divisions of the Research-and-Production Association dealing with the questions of working out the typology of editions, the branch terminology, the preparation of standards regulating publishing business and making up prognoses for the book-publishing development.

In my report I'd like to dwell on one of the aspects of our institution's activities - the preparation of bibliographic information. It is due to the fact that in 1987 there was created a united complex responsible for the preparation, publishing and dissemination of the state bibliographic indices and cards of centralized cataloging.

For 70 years of existence of the All-Union Book Chamber there has been established as it seems to us a rather harmonious (but not statical) system of the state bibliographic information.

The system of the state bibliographic indices (the Russian abbreviation is ГБУ) and of printed cards of centralized cataloging (the Russian abbreviation is ПК) reflects the infor-

mation on all kinds of printed editions, published in the USSR. The structure of the system of indices is conditioned by the division of bibliographic information included into different types. Complete and reliable information on all kinds of the Soviet press is issued for a year period - about 85.000 books and pamphlets, 20.000 synopses of theses, 220.000 articles from collections, magazines and newspapers.

The information on printed publications is given in a systematized order according to the established scheme of classification of literature which allows to group editions within all branches of knowledge. To meet the requirements in multiple-aspect information retrieval the state bibliographic indices have rather extensive reference aids.

The All-Union Book Chamber also carries on the registration of bibliographic materials which are published whether in an independent edition or as a part of an edition (unindependent bibliographic index). Such registration serves a basis for publishing an annual "Bibliography of the Soviet Bibliography".

An important aspect in the creation of bibliographic information is the publication of printed cards of centralized cataloging describing our home press. These cards are widely used in the country's libraries. They are published in sets, intended for different types of libraries and scientific and technical information organs. Full, partial and serial sets reflect information on books, articles and reviews from magazines. Synopses of theses are reflected in full and serial sets. Besides, there is a set published describing central newspapers' articles. The total annual number of printed cards is about 400 million copies.

The basis for creating the state bibliography information are sample copies of all types of editions, which are received by the Book Chamber from all polygraphic enterprises of the country.

After bibliographic processing the publications are sent for permanent storage to the Book Chamber division - to the USSR Press Archives which contain the collection of more than 67 million storage items - it is our national property.

The organization of work on creating bibliographic information is influenced to a great extent by scientific and methodic research in the field of the state bibliography. This research results in working out a series of instructional materials or manuals on the selection of literature reflected in the state bibliographic indices and printed cards and also on the problems of subject indexing systematisation and technology.

It is necessary to mention about the publication by our institution of a scientific-practical magazine "Soviet Bibliography". This magazine plays a certain role in organizing the bibliographic science in our country, contributes to the development of theoretical ideas and to the popularization of progressive ideas in vast bibliographic circles. The history of the magazine began in 1933, when the All-Union Book Chamber initiated the publication of a world-unique periodical collection on the questions of bibliographic theory and practice.

In the late 1970-s the All-Union Book Chamber proceeded to developing and introducing stage-by-stage an automated system of information processing, storage and output.

The development of the automated system was based on a number of principles. Some of these principles are common for all automatized control systems and some are influenced by a specific character of the Book Chamber as an object for automatisation. These latest include:

- the principle of systematic approach which demanded a comprehensive analysis of our institution's activities;

- the principle of new decisions, calling for a search of a new technology of handling the publications and preparing bibliographic indices and printed cards and requiring the solution of new problems and not simply a mechanization of traditional operations;

- the principle of the common information basis, which would provide a single input and muptiple and muptiaspect use of information;

- the principle of typification determining the development and use of typical solutions;

- the principle of a mobile system enabling the introduction of new decisions taken in the process of operating the system;

- the principle of conjunction with other systems and use of their ready decisions.

The realisation of the principle of a single information input caused the necessity of developing and introducing a unified format for recording of bibliographic processing results, a pre-machine format of this record and an appropriate document - a coding sheet.

The basis for working out a pre-machine format was the MARC-format and also the principles of our home cataloging

practice were taken into consideration. Our efforts resulted in the creation of presently used MARC-type format with three-digit punctuation of fields, with the division of fields into components (subfields) in accordance with the requirements of the bibliographic description standard, based on the International Standard Bibliographic Description (ISBD). For machine processing and transfer of information on magnetic tapes the international communicative format is used. This format meets the requirements of the CMEA standards 4283-84 and 4269-83 and of the USSR state standard 7.19-85. Coding of information is carried out in accordance with the CMEA standards 360-76, 356-76, 359-76.

The automatized system is the basis for publishing printed cards with the bibliographic description of books. The publication of the state bibliographic index "Book Annals" is also automated. In the nearest future seven more editions will be published by means of the automated system including "Annals of Magazine Articles" and "Annals of Newspaper Articles".

Our automatized system is designed on the basis of a technical resources complex including the united system of electronic computers, our home-made phototypesetting equipment of the "Cascade"complex and videoterminals.

This will enable achieving a task of forming and maintaining a bibliographic data bank "The Soviet Book" which will contain the data on home editions. This will provide the possibility of dialogue information retrieval meeting the users' requirements and the information exchange with the interested organizasions at home and abroad.

The yearly exchange of magnetic tapes is about 70 thousand records on books and booklets. By the beginning of 1990-s this figure will increase up to 300,000. It will include the information on articles from serial publications.

There has been planned a programme of creating a network of state bibliography automated centres including the All-Union Book Chamber, republican book chambers, the organs of scientific and technical information on the press. Such a concentration of resources will raise the bibliographic practice to the higher level.

This will allow the republics to carry out bibliographic processing of the national literature in the languages of publication to the united data bank "The Soviet Book". Thus and so there'll be realized the principle of a single input of information and the range of information service will widen including the exchange of information on machine carriers and in teleaccess regime.

The bilateral or multilateral information exchange between countries realizing the basic principle of the Universal Bibliographic Control Programme guarantees not only a single input of unified data on national publications into local systems belonging to one organization or country but it also allows other countries or world regions to use these data through their own automated systems on an international scale.

This proposition makes us believe in the possibility of organizing a bilateral information exchange with our colleagues from the Library of Congress, so we would like to suggest that this question should be considered. The fact that we use in our automated system a MARC-type pre-machine format, a unified bibliographic description on the ISBD basis, the Universal

Decimal Classification (UDC) and almost a complete coincidence of our subject headings with yours - all that proves that there are real prerequisites for a fruitful information exchange between our two institutions.

Possible variants of work on the exchange of bibliographic information can be as follows:

- providing the transfer of information on magnetic tapes;
- providing a mutual access to the national bibliography data banks;
- providing mutual "pumping over" of the data bank information on current and retrospective files.

We can go further and set forth a programme of a stage-by-stage increase of the volume of information granted:

Stage I - the information on Soviet books published since 1985 (can be given in Russian beginning with 1989)

Stage II - the information on the articles from Soviet periodicals in Russian (beginning with 1990)

Stage III - the information on republican editions in the languages of the peoples of the USSR (beginning with 1995)

At present the information can be granted on magnetic tapes. The periodicity - once in three months on the basis of a bilateral treaty.

The All-Union Book Chamber is interested in exchange tapes with information on the English-language literature. This would be the development of one of its functions - that of the library collector, providing libraries and bibliographic institutions of this country with publications and bibliographic data.

The development of friendly relations between our countries and our concern about the perfection of information handling processes aimed at meeting the needs of the society are the token of establishing business contacts between the Library of Congress and the All-Union Book Chamber in the field of information exchange.

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Software and Information Support for the Automatized System of the State Bibliography of the USSR by

A.A. Ratnikov
Head of a Scientific Research Section, Research-and-Production Association
The All-Union Book Chamber

The USSR - USA seminar "Library Technology and Preservation as a Means of Providing Access to Library Resources".

5-8th of July 1988.

SOFTWARE AND INFORMATION SUPPORT FOR THE AUTOMATIZED SYSTEM OF THE STATE BIBLIOGRAPHY OF THE USSR.

Ratnikov A.A.,
head of a scientific research section,
Research-and-Production Association
"Vsesoyusnaya Kniznaya Palata" (The
All-Union Book Chamber)

Washington, D.C.,1988.

Software and Information Support for the Automatized System of the State bibliography of the USSR.

In this report I'd like to describe the points of departure and present status of software and information support for the automatized system of the USSR state bibliography. It is supposed that this report continues the previous one called "Some Aspects of the Automated Preparation of publications of the state bibliography and centralized cataloguing". It was presented on my behalf at the seminar in Finland.

Software (in accordance with the classification adopted in the USSR) includes not only the means of solving the problems of the system itself, but also the means of automatisation of programming and of adjusting programmes.

General software for an automated system includes an operation system (version 6) of the computer, languages of programming PL/I and the assembler. The main special software provides the solution of the following problems:

- data input and preliminary data processing;
- stocking of databases;
- analysis of requests and information in data banks on these requests;
- editing and data output;
- the communication with a user in dialogue regime;
- interaction with other automated systems.

Auxiliary software provides the realization of operations serving the procedures of the main special software (forming coding and decoding tables, loading of machine dictionaries and data tables). It also serves to realize the analysis of troubles in the course of information processing.

The main special software for the automated system of the national bibliography is composed of the following packages of programmes:

- the package "Primus" worked out by the Moscow Engineer and Physical Institute;

- the complex of programmes for preliminary data processing, worked out in the All-Union Book Chamber;

- the package of applied programmes CDS / ISIS / ES, worked out by UNESCO and adapted for a machine of ES Computer series in the international scientific and technical information centre;

- the complex of programmes for forming the texts of national bibliographic publications developed by the All-Union Book Chamber;

- the package of applied programmes "Soyuz", worked out by the Moscow Polygraphic Institute.

The package PRIMUS allows us to carry out the work on data sets in dialogue regime (establishing, renaming, liquidation, data input and updating). The complex of preliminary data processing programmes realizes the control over bibliographic and official information entering the system and transforms this information into machine format. The package of programmes CDS / ISIS / ES realizes the following functions:

- stocking, maintaining and renewal of databases;

- search, selection, editing and output of data.

The complex of programmes for forming the texts of state bibliographic publications ful-fills the following functions:

- distributing bibliographic records among publications;

- duplicating of bibliographic records within editions;

- regulating bibliographic records;

- numbering of bibliographic records;

- allocation of codes according to the "Common classification of literature for book-publishing in the USSR";

- forming the text of publications.

The package of applied programmes "Soyuz" realized polygraphic processing of the text (making-up, editorial correction, forming of the lay-out, forming of programmes for phototypesetting control). The possibilities of editorial correction of the text are quite insignificant.

For further account it seems quite important to single out the following moments of the primary task of automatization of bibliographic and information processes in the All-Union Book Chamber:

- due to the fact that the All-Union Book Chamber is the centre of the State bibliography and centralized cataloguing and general annual volume of its publications reaches 8,000 of publisher's sheets, the main efforts must be aimed at automatizing the preparation of publications;

- putting the automated system into operation must quarantee 1) symplifying the traditional technology of bibliographic handling of sample copies of publications; 2) a smooth switchover to a new technology in terms of full-time and intense participation of personnel in production processes.

It was evident that satisfying these requirements demanded creating a unified input document taking into account all the peculiarities of preparing the Book Chamber's publications. It was also known that the task of developing software could be essentially symplified if we made use of the input language approximating to the formal languages of programming. Nevertheless developing the automated system we chose the format of an entry do-

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cument approximating to the great extent to the natural language and to the rules worked out by bibliographers for many years passed.

A pre-machine format of bibliographic entries is based on the MARC format structure. It has three-digital field identification and simple digital sub-field identification, it includes bibliographic data, classification codes, subject headings and some official data.

Creating our automated system we chose the principle of single-time processing of editions, delivered to the Book Chamber for state bibliographic registration. Due to this fact the demands claimed to the system of information input were rather high. In the first version of the automated system we used two types of information control;

- Universal control based on duplication of the keyboard processes;

- formal amd logical control checking the correct identification of bibliographic elements and data in a number of fields having clear-cut types of data, structure and semantic range. The preparation of bibliographic information was carried out on the punched tape which created great difficulties in realizing correction operation.

A switchover to the bibliographic information input in the dialogue regime with the usage of the package of programmes PRIMUS has increased the effectiveness of correction operations. However, a great volume of information input (1,200 documents per day, 500 Kb) and - as a consequence - the danger of a computer's turning into a mechanism of data preparation have practically eliminated the possibility of input information control by the method of verification. To carry out input information cont-

rol we now resort to proof-reading of the hard copy of entering documents. Before inserting information into the database there must be carried out auxiliary correction after forming a lay-out of the publication. Technological frameworks include formal control eliminating the possibility of further processing of documents not corresponding to formal parameters.

The new version of formal control programme has the following peculiarities distinguishing it from the previous version:

- there is a control unit for coding special symbols;
- there are checking operations introduced with the aim of finding out the discrepancy of data inside a document;
- instead of formal control there has been introduced the control by the index vocabulary according to which subject filling of bibliographic indices is carried out;
- the adaption to the structure of an inserted document is carried out with the help of dynamically loaded tables of correspondence of pre-machine and system formats.

The range of symbols and rules of input coding are worked out on the basis of:

- the set of symbols and rules of their representation in the automated polygraphic system "Soyuz";
- rules of coding symbols in the package of programmes CDS / ISIS / EC;
- the profound conviction of producers in the necessity of some associative connection berween the symbol and its representation on the keyboard of data preparation mechanisms.

The input format of the package of programmes CDS / ISIS/ EC is used as a system's internal format. This format has two-digit field identification and simple subfield identification in letters (the first 16 letters of the Latin alphabet).

The use of this format enables unifuing the procedures of data preparation on the basis of data sets intended for input into the database as well as on the basis of document files selected from the database by a request. In the second case the procedure of documents search and output is added with an interface programme, providing the conformity of input and internal database formats.

The interface programme, transforming the documents selected by a request from the database into a communicative format, enables the organization of bibliograhic information transfer to the users of the automated system.

Now a few words on using the package of programmes CDS / ISIS/ EC in the automated system. Input is realized through an intermediate data set which is also used for correction of data in the database. The data input can be realized in the dialogue regime, however this possibility is not used due to the technology described earlier. This package of programmes has an integral phototypesetting section intended for forming various bibliographic indices but (1) the polygraphic system doesn't take into consideration all the technological instructions on typesetting in printing houses and (2) the language of forming the text of bibliographic indices has failed to foresee all the peculiarities of forming bibliographic entries in the Book Chamber publications. Therefore the phototypesetting section CDS / ISIS/ EC was replaced with a complex of programmes for forming the texts of the Book Chamber publications. This complex is intended for joint work with the automated polygraphic system "Soyuz".

The principle of single input caused the necessity in a clear-cut distiction between the data on polygraphic representarion of elements and bibliographic elements as such. If we speak about the signs of small and capital letters and the graphic basis of symbols reproduced in terms of polygrapnic design then these data will be included into source bibliographic information. The instructions on the type body, on letters inscription, on arranging the elements of bibliographic description on the type page are included into the text automatically. New versions of programmes for automatic forming of the text of bibliographic publications have the following dictinctions from the previous versions:

- arranging the texts of bibliographic records is carried out at the subfield level;

- adjusting of programmes to the formed publication through dynamically loaded tables of correspondence of the system's internal format to the representation of records in the input format of the automated polygraphic system;

In addition there have been worked out special programmes of the "cutting-off" of bibliographic records into a set vertical format intended for the preparation of printed cards.

The technology is as follows:

- forming of the text of bibliographic description on printed cards;

- making-up realized by the polygraphic system resulting in typesetting for further switchover to the typing of text lines;

- realizing the programme analysis of the dummy of the make-up;

- automatic insertion of changes into the printed cards text on the input format;

- repeated making-up by polygraphic system with retaining data set intended for forming a phototypesetting control programme.

This is the way of carry-ing on a dialogue with a closed polygraphic system.

The whole complex of programmes worked out in the All-Union Book Chamber is written in a single style and at a single level. All programmes are intended for information processing in the package regime and work with consecutive data sets at the level of logical records. Direct addressing the entries of comparatively small in volume reference sets of data is organized in the computer's working storage which is probably not so bad if we take into account the potentialities of operational system with virtual memory.

The whole complex of programmes is written in the Assembler language.

The following way was used for designing macrofacilities representing a fragment of the problem language to solve the task:

- each technological operation was provided with a programme or a fragment of a programme;

- the terms were worked out for the structure of programmes, fragments, volume and way of links, designation.

In the process of development some typical fragments were brought to light, further on they were joined into the means of auxiliary software - service programmes. Service means can be

used with the help of macrocommands responsible for transfer of parameters and for the choice of an adequate regime of work. Further development of programmes with the help of these macrocommands reveals the necessity in formal control over parameters and consequently in working out corresponding macrocommands It also revealed some stable combinations of commands. At the moment total number of macrocommands is about 200, and the number of programmes worked out with their help is about 120.

Among the prospects of development of the automated system I'd like to stress the necessity of using personal computers for bibliographic information input and forming of publications and the development of the system's potentialities as to information transfer through communication channels.

State Bibliography Linguistic Support in the USSR

by

A.A. Dzigo
Head of a Research Section, Research-and-Production Association
The All-Union Book Chamber

The USSR - USA seminar: "Library technology and Preservation as a Means of Providing Access to Library Resources"

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STATE BIBLIOGRAPHY LINGUISTIC SUPPORT IN THE USSR

Dzigo A.A.,
head of a research section,
Research-and-Production Association "Vsesoyusnaya Kniznaya Palata" (The All-Union Book Chamber)

Washington, D.C., 1988

State Bibliography Linguistic Support in the USSR

Dzigo A.A.,
Cand. Sc. (Philology),
RPA "The All-Union
Book Chamber"

State bibliography linguistic support is a set of language means intended for creating bibliographic information on home publications. The choice of language means is determined by the tasks facing state bibliography: registration of editions published in the USSR; creation of state bibliographic information on the USSR publications fixed in documents and delivering this information to the users.

In the process of analytico-synthetical handling of publications delivered to the All-Union Book Chamber there can be singled out two levels of analysis - registrational analysis and subject analysis. Registrational analysis is aimed at creating the bibliographic description, at the allocation of one or more ordinal numbers and a marking out index, showing that the document in quiestion belongs to a definite subject field. Subject analysis means singling out the major and minor topics of editions which are designated by means of terms and classification indices of the information retrieval languages. The results of analysis of both levels are reflected in the bibliographic entry.

Thus the basis of state bibliography linguistic support is composed of 3 major information retrieval languages:

- the language of bibliographic description;
- the language of classification codes;
- the language of subject headings.

The auxiliary language means include symbols and codes marking the type of edition, the numbers of state registration of sample copies, etc.

Let me briefly characterize these main information retrieval languages.

The language of bibliographic description is used for linguistic support of practically all processes of handling bibliographic information, for conducting reference work, generation of data bases, etc. The bibliographic description is drawn up in accordance with the requirements of state standards, based on international documents regulating bibliographic description (ISBD).

A unified bibliographic description presupposes an accurate and adequate definition of compulsory and optional elements, their structure and particularly accurate definition of punctuation marks (identifiers) with the aim of using them as codes in the exchange of bibliographic information and overcoming the language barriers. To achieve this task the rules of bibliographic description employed in the All-Union Book Chamber make use of a full set of elements joined into bibliographic areas. The description is supplemented with a heading which gives freedom of choice: it may be a name of an individual or collective author, it may be designation of the type of printed matter or a unified title of an anonymous classical work.

 The use of the heading is important for maintaining cata-
logues and card files by libraries and bibliographic instituti-

ons of the USSR. In this respect our institution is still more responsible for completeness and accuracy of data on the names of native authors (individual and collective).

The use of the heading presupposes the obligatory repetition of all enumerated elements in the area of title and data on responsibility.

The rules of citing the name of an individual author in the heading of description meet the international requirements: in the heading of a one-author book description the author's name is cited, the heading of the description of a book written by two authors contains both authors' names, a book written by 3 authors is described under the name of the first author added with the words "and others". If a book has 4 and more authors then the heading of the description will consist of the book title.

However, the significance of the heading has lately decreased to a certain extent due to the automatization of bibliographic processes which allows other elements of the bibliographic description to be widely used as information retrieval keys. Taking this fact into consideration we can offer a free choice of elements to be used as the heading in our bibliographic entries on magnetic tapes. The choice will depend upon the tasks of a concrete catalogue.

The most adequate headings for bibliographic exchange are the main title, data on publishing, place of publication, publishing house, year of publication, title, number of the issue or series and ISBN. ISBN is being introduced into the book-publishing practice of the USSR stage by stage beginning from 1987. And beginning with 1989 it will be included into the bibliographic description of all editions as one of the main retrieval keys.

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bibliographic description as a main information retrieval language enabling the realization of information retrieval by means of various combinations of elements freely chosen. This provides certain freedom of identifying publications in the process of bibliographic exchange.

The choice of the language of classification codes is conditioned by a universal character of state bibliography, by the necessity of meeting the demands of different libraries and bibliographic institutions of the country and of achieving the language compatibility of libraries and information organs. At present the following classification schemes are used for indexing:

- the Universal Decimal Classification (used in the library system of the Ministry of Culture of the USSR);

- the Common Classification of Literature for book-publishing of the USSR (used as a branch classification in the system of the USSR State Committee on Publishing, Polygraphic Industry and Book-Trade);

- the Rubricator of the State Automated Scientific and Technical Information System (used in the system of scientific and technical information of the country).

Each of classifications cited played a certain role being used in different spheres of scientific and practical activities of the country. But speaking of the possibility of bibliographic exchange we would like to single out the significance of the UDC as the classification widely used in many countries of the world. Besides its universal character and decimal division one should also note its multiaspect character provided by the structure of the main UDC table and becoming apparent in the

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process of using auxiliary tables and methods of forming indexes. One of the main specific features of such information retrieval language as the UDC is the hierarchical structure of most divisions following the principle "from the general to the particular" with the use of the decimal code.

The universum of knowledge is subdivided by analogy with decimal fractions. An undeniable advantage of the UDC for bibliographic information exchange is the principle of combination structure of indexes. This provides the possibility to effectively reflect the information along one-branch and multibranch canals. Indexing in the All-Union Book Chamber is realized in accordance with the 3-d Soviet edition of the UDC which corresponds to the international standard for classification. The classes of natural and technical sciences are characterized with the full coincidence of the main designation principles. But there is certain divergence in wordings relating to the classes of social sciences which is conditioned by the indexing practice in the USSR bibliographic institutions. Nevertheless the use of combination method of creating indexes enables realizing an adequate search of the information needed. Thus the conditions are created for matching the classification codes aimed at carrying on an adequate bibliographic exchange.

The language of subject headings consists of words and word-combinations which are relatively formulated in a direct or inverted form. Subject headings reveal the multiaspect contents of documents, rapidly and flexibly reflect new concepts appearing in science especially under the conditions of growing processes of internal integration. Subject headings can reflect the contents of editions in a more precise than the classification codes way being simultaneously more available for vast circles

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of users, but their availability is limited by national frameworks as far as they are formulated in Russian. The use of subject headings for the bibliographic exchange is possible through creating a universal bilingual (English and Russian) rubricator.

The introduction of subject headings into analytical and synthetic handling of information is more and more widely used in the practice of the All-Union Book Chamber due to the need for the dissemination of machine-readable information. The language includes simple and component subject headings and semantic sub-headings concretizing the contents of editions. The universal character of subjects, the rubrics intended for catalogues and card-files of large scientific libraries and bibliographic institutions - all has allowed us to work out the information retrieval language with an essential lexico-semantic filling (about 50-60,000 of subject headings - 7-10000 are most widely used). Due to the fact that any language is a dynamic system which must keep pace with the up-to-date level of achievements in the field of science, engineering, material production, etc., the contents of the subject rubricator is constantly widening. At the beginning of each year about 1,000 of new subject records are included into it (about a quater are of the socio-political sphere) and about 8% of obsolete records are expelled.

The level of subject analysis of most publications is 2-3 subject headings per one edition. The exception is socio-political literature where the level of subject analysis reaches 5-6 subject headings and even up to 10 subject headings for some reports of party leaders and statesmen. Besides I'd like to stress a high degree of matching between the languages of subject headings used at our RPA and at a number of the country's largest libraries as to the lexical filling and methods of working out

and maintaining rubricators. On the whole I should note that the language of subject headings makes it possible to carry on a multiaspect search of relevant editions and hence in may be widely used for the needs of bibliographic exchange.

All these means enabling the information input into an automatized system are brought into operation through a system of bibliographic entry coding - through a pre-machine format, worked out on the basis of formats "БИС-70" (the USSR public scientific and technical library) and MARC (the Library of Congress, USA) with some structural changes. The structure of the format used in the All-Union Book Chamber consists of 3 groups of fields: control (001-009), functional (010-099) and bibliographic data fields (100-899).

To provide the automatic recognition of each element of the information retrieval language the fields are designated by a three-digit decimal number - it's a sort of a label called "mark". The use of these marks helps, on the one hand, easily single out identical elements in the couse of different operations with records and on the other hand it makes it possible to do without any limitations as to the volume of the information included and to the length of records. Thus we can provide a stable and at the same time dynamic description of various editions.

Some fields of the format are subdivided into subfields which are identified by records of bibliographic syntax and separators.

To specify data recorded in the field simple indicators in letters are used.

Summing it all up we can draw the following conclusions:

1) State bibliography linguistic support contributes into the practical application of the principle of single-time ana-lytico-synthetic processing of editions and further multiple use of results of this processing.

2) It guarantees the compatibility with the language means of all traditional and automated systems of the USSR libraries and bibliographic institutions.

3) It has an adequate quantity of information retrieval languages to provide successful organizing and carrying on the bibliographic information exchange between the USSR and the USA.

ООП ВКП.